THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XXII. No. 529.] LONDON, JANUARY 14, 1873. [25TH YEAR.] DOUBLE No. Price 1s.

RAMSAY'S NEWCASTLE CANNEL COAL. Analysis—10,000 cubic feet of gas per ton of coal; 26-candle gas; 13¼ cwt. coke per ton of coal.

RAMSAY'S PATENT CONDENSED COKE.

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GAS-RETORTS, introduced 1828. FIRE-BRICK WORKS, established 1804. FIRE-CLAY, SANITARY PIPES, CHIMNEY-TOPS, and all Goods made of Fire-Clay. The Fire-Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article. The FIRE-BRICKS (marked "RAMSAY") are to be seen in all parts of the world, and the Works are the most extensive in the Kingdom.

Manufactories—Derwenthaugh, Swalwell, and Hebburn Quay, near Newcastle-on-Tyne; and London Wharves—Falcon Wharf, No. 80, Bankside; and Honduras Wharf, Cubit Town. Large stocks kept.

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GEORGE GLOVER & CO.,

Patentees of the Standard Gasometers for the Government, and of the

IMPROVED DRY GAS-METERS.

These Meters are warranted to measure correctly and not to vary. Their acknowledged superiority has brought them into general use more rapidly than any Meters hitherto manufactured.

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OR
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COWEN'S PATENT FIRE-CLAY RETORTS.

JOSEPH COWEN and CO.,

BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,

Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS-RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS-RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."

J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.

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Coal Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.

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AND
THE ALMA WORKS, WALSALL.
Established at the commencement of Gas Lighting.

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J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water; Gun-Metal Cocks, Stocks, and Dies; Galvanized Tubes and High-Pressure Tubes, &c.

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NEAR NEWCASTLE-ON-TYNE.

WILLIAM COCHRAN CARR begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other articles in Fire-Clay, executed on the shortest notice, and on the most reasonable terms.

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MEDAL AWARDED, EXHIBITION, 1862, "FOR GOOD WORK."

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Also ORDINARY WELDED WROUGHT-IRON TUBES and FITTINGS,

FOR GAS, STEAM, & WATER, EITHER BLACK, GALVANIZED, OR ENAMELLED.

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For Gas, Steam, Water, &c.

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For Locomotive, Marine, and Stationary Boilers.

Boiler-Tube Ferrules, Gun-Metal Gland Cocks, Water-Gauges, Whistles, &c.; Stocks, Taps, and Dies for Screwing, and Gas-Fitters Tools of all kinds.

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THE UNVARYING WATER-LINE GAS-METERS,

IMPROVED DRY GAS-METERS, in Cast-Iron or Tin-Plate Cases;

STATION-METERS, ALL SIZES, up to 15 feet Square, with PLANED JOINTS;

Experimental Meters, Photometers, Pressure-Gauges,

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HYDRAULIC TUBES, BEDSTEAD TUBES, WELL TUBES, TELEGRAPH POSTS, COILS, &c.;

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PURIFIERS, CONDENSERS, SCRUBBERS, RETORTS, VALVES;

IMPROVED WROUGHT-IRON RETORT-LIDS, CROSS-BARS, & SCREWS;

AND GAS APPARATUS OF EVERY DESCRIPTION.

SOLE MANUFACTURERS OF LIVESEY'S PATENT GASHOLDER MAN-LID,

By use of which Man-lid, inlet and outlet pipes can be examined and cleansed without loss of gas in crown of holder, or ingress of atmospheric air.

ROOFS, GIRDERS, BRIDGES, AND BOILERS OF ALL KINDS.

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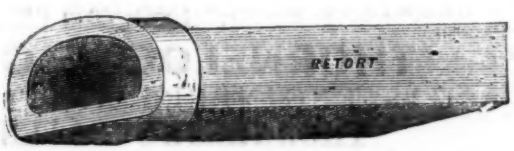
STOURBRIDGE FIRE-BRICK AND RETORT WORKS.



KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Bars, Flues, and Quarries, are all Manufactured of the same quality of Clay.

Every Retort and Brick is branded "King Brothers, Stourbridge."

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These Paints are specially prepared, and are most valuable for protecting and arresting rust on all ironwork, and will cover *tar* effectually; they adhere strongly, acquire great solidity, do not crack or flake off, or blister by heat, and they resist the effects of *sulphurous and gaseous exhalations*.

They are used extensively at a large number of *Gas-Works*, on gasholders, purifiers, and all classes of ironwork.

Our Circular contains every information, and will be forwarded on application. Sample Can for trial sent free of charge.

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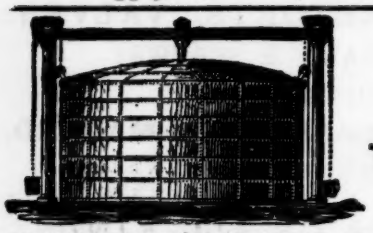
FIRE-CLAY GAS-RETORTS & FIRE-BRICKS,

Of every size and shape, and of the best quality; also of White and Coloured GLAZED BRICKS, SANITARY PIPES, &c., &c.

The F. I. Co. have the exclusive right to make and sell Fraser's Patent "Ribbed" Gas-Retorts in Fire-Clay.

In order to meet the constantly increasing demand for their Gas-Retorts, the F. I. Co. have recently made such an addition to their premises as will enable them to execute expeditiously the largest home or foreign orders.

Apply as above, or to the London Offices, 15, NEW BROAD STREET, E.C.



IMPROVED GAS APPARATUS,

FOR CITIES, TOWNS, VILLAGES, &c.,

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SOLE MANUFACTURERS of B. W. THURSTON'S IMPROVED SCRUBBER, CONDENSER, and WASHER, in use in many of the principal Gas-Works on the Continent.

PATENTEES of the IMPROVED COMBINED PURIFYING APPARATUS, so eminently adapted for Exportation.

ESTIMATES, PLANS, and SPECIFICATIONS PREPARED for BUILDINGS and APPARATUS.

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DANIEL HOWARD,

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Westbromwich, near Birmingham.

MANUFACTURER OF TELESCOPE AND SINGLE GASHOLDERS,

WROUGHT & CAST IRON TANKS

FOR DITTO,

PURIFIERS, CONDENSERS, SCRUBBERS, HYDRAULIC MAINS,

And all kinds of GAS APPARATUS.

Wrought-Iron Roofs, Bridges, and Girders; Steam, Hot Water, and Range Boilers; Tanks, Cisterns, &c.,

And all kinds of Wrought-Iron Work.

DRAWINGS, SPECIFICATIONS, and ESTIMATES FURNISHED.

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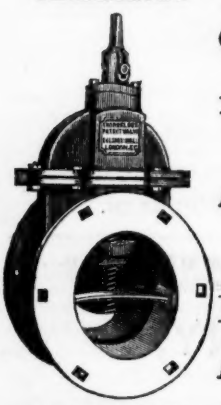

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THORNELOE & COCHRAN,

GAS ENGINEERS AND CONTRACTORS.

THORNELOE'S PATENT VALVE

For GAS and WATER, from 3 to 24 inches,

SUPPLIED FROM STOCK.

They are now in use at the following Gas-Works in London:—

PHŒNIX AND SOUTH METROPOLITAN;

Also at Aylesbury, Aldershot, Colchester, Farnham, Guildford, Leicester, Ilford, Middlesboro' Patent Gas Company, Reading, &c.

SOLE MAKERS OF

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PATENT REGULATING DIP-PIPE.

Prospectus, with Price Lists and Particulars, on Application.

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EXPERIENCED WORKMEN SENT TO ANY PART OF THE COUNTRY.

Address, 34, LONDON WALL, LONDON, E.C.

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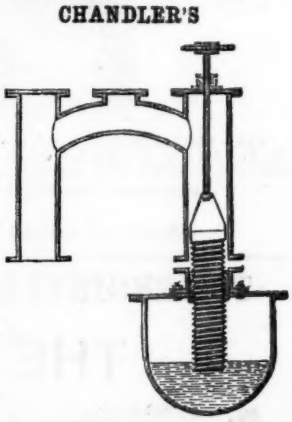

PATENT DIP-PIPE.

EDGE'S PATENT

FOR REMOVING THE

CARBONACEOUS INCRUSTATION FROM GAS-RETORTS.

Testimonial of Mr. W. Ford, Engineer of the Stockton Corporation Gas-Works.

"Dear Sir,—In reply to your inquiry as to my experience of Edge's patent method for removing the Carbonaceous Incrustation from through Retorts, I have much pleasure in expressing my thorough appreciation of the process; it has been the means of saving our stokers many hours hard work, and the Retorts much serious destruction.—I am, dear sir, yours truly, "W. FORD."

"To E. Goddard, Esq., Ipswich."

For particulars and terms, apply to E. GODDARD, Sole Agent, Gas-Works, IPSWICH.

THOMAS PROUD,

Brookfield Works,

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MANUFACTURER OF

WOOD GRIDS

FOR PURIFIERS AND SCRUBBERS,

AND

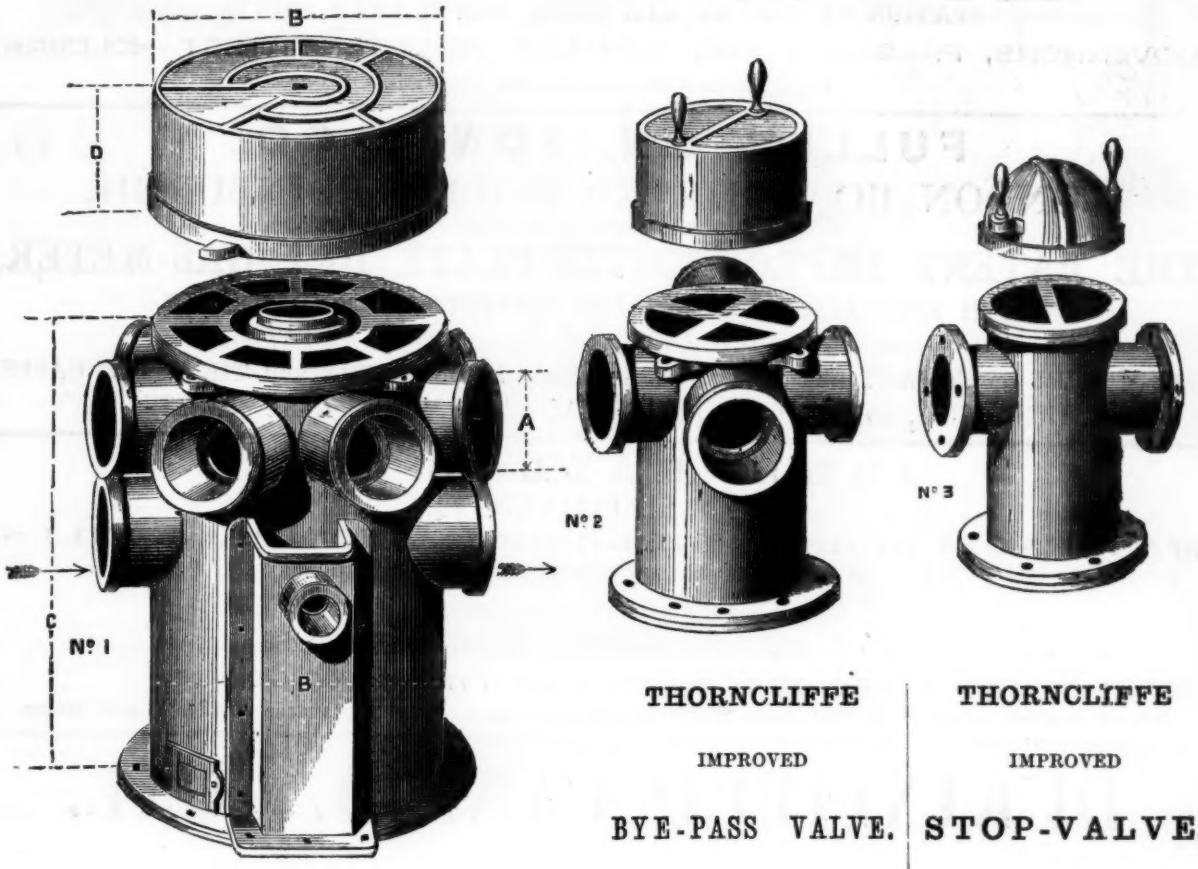
CONTRACTOR FOR GAS APPARATUS & MAIN-LAYING.

THE THORNCLIFFE IMPROVED CENTRE-VALVE,

MANUFACTURED BY

MESSRS. NEWTON, CHAMBERS, & CO.,

THORNCLIFFE IRON-WORKS, NEAR SHEFFIELD.



Sizes of the

THORNCLIFFE IMPROVED CENTRE-VALVE.

		Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
A	Bore of Pipe...	4	5	6	7	8	9	10	12
B	Diam. of Body.	16	20	23	26	28	31	34	40
C	Height of Tank.	33	35	38	43	46	48	51	56
D	Depth of Cover.	8	9	10	11	12	13	14	16
	Total height...	41	44	48	54	58	61	65	72

THORNCLIFFE IMPROVED BYE-PASS VALVE.

SIZES

From 3 ins. upwards.

THORNCLIFFE IMPROVED STOP-VALVE.

SIZES

From 3 ins. upwards.

In all cases the Covers are cast heavy enough to resist any required pressure.

The advantages derived from the adoption of these Valves are so manifest and cardinal that in the immediate character of the change—the simplicity of the machine—the facility affording for cleaning out connexions between Valve and Purifier—the perfect collection and delivery by suitable overflow of the ammonia, at a greatly diminished depth from ground-line over the old form of Valve—the advantage of connecting on the same level, and at any angle, or opposite to each other, the inlet and outlet pipes without dip or rise—the clear acquisition of space in the purifying-house, by being able to place the boxes nearer together, the new Valve being entirely under the floor—and lastly, though of the greatest importance, the passage of crude and unpurified gas during the change is minimized to the merest fraction, thus preventing the fouling by impure gas the delicate machinery and easily affected exposed movements of the station-meter, thereby preventing the introduction of the enemy (unpurified gas) into the gasholder. Also a dead abutment is offered to all back pressure, imparting thereby to the gauges, governors, and hydraulic seals, a steadiness of action never realized with the once famous, but now fast becoming obsolete, Hydraulic Centre-Valve.

N., C., and Co. also Manufacture and Erect

PURIFIERS, CONDENSERS, SCRUBBERS, GASHOLDERS, ROOFS,

And every description of Gas Machinery.

TENDERS GIVEN FOR WORK FIXED COMPLETE IN ANY PART OF THE KINGDOM.

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GARRATT STREET WORKS, OLDHAM ROAD, MANCHESTER;

Manufacturers of

IMPROVED CONSUMERS WET GAS-METERS

IN CAST-IRON CASES,

THE UNVARYING WATER-LINE GAS-METER,

AND

IMPROVED DRY GAS-METERS;

STATION-METERS OF ALL SIZES, with PLANED JOINTS;

GOVERNORS, PRESSURE AND EXHAUST REGISTERS, TEST HOLDERS,

And all kinds of Experimental Gas Apparatus.

FULLERTON, SON, & CO.,

LONDON ROAD METER-WORKS, EDINBURGH,

SOLE MANUFACTURERS OF

THE PATENT IMPROVED TIN-PLATE DRY GAS-METER,

WITH SPECIAL FACILITIES FOR ADJUSTMENT AND REPAIR,

The principal parts of the mechanism being accessible by the removal of a single Screw.

GAS-METERS on the WET and DRY principles made in CAST-IRON and TIN-PLATE CASES.

STATION-METERS, GOVERNORS, EXPERIMENTAL & TEST METERS, GAS APPARATUS, &c.

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STOURBRIDGE,

MANUFACTURERS of FIRE-BRICKS, LUMPS, & TILES,

AND EVERY DESCRIPTION OF FIRE-CLAY GOODS.

N.B.—A Stock of 15 and 16 in. CIRCULAR RETORTS always on hand. Other kinds made to order on short Notice.

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THE DUNKIRK COAL COMPANY.

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WILLIAM INGHAM AND SONS,

WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,

beg to call especial attention to their RETORTS, which have for many seasons proved to be unsurpassed in quality by any in the Kingdom, their FREEDOM FROM CRACKS and the ADHESION OF CARBON rendering them worthy the attention of all parties interested in the making of Gas.

The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

Estimates for Setting, or Bricklayers sent when required.

GAS OVENS IN SEGMENTS OF EQUAL QUALITY.

A large Stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all Sizes kept in London at Mr. ALFRED WILLIAMS, Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.

N.B.—*Export orders continue to have prompt attention.*

TANGYE BROTHERS & HOLMAN,

10, LAURENCE POUNTNEY LANE, LONDON, E.C.,

SOLE MAKERS OF

MORTON'S PATENT SELF-SEALING RETORT-LIDS,

WITH

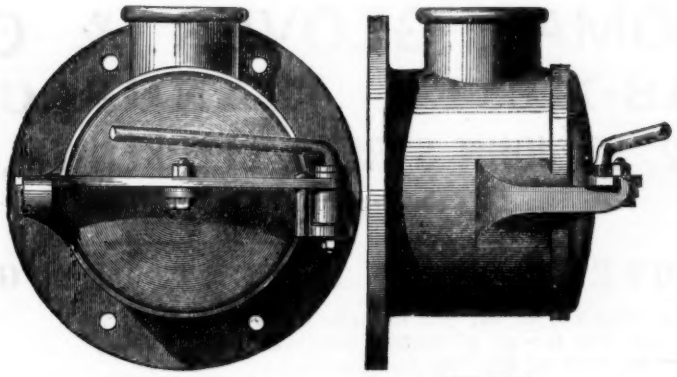
HOLMAN'S PATENT ECCENTRIC FASTENINGS.

OVER 7000 IN USE.

NO LUTING.

LIDS HINGED TO MOUTHPIECES; NO LIFTING ON OR OFF.

NO SCREWS FOR FASTENING.



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SIMPLE.

ECONOMICAL.

DURABLE

EFFECTIVE.

NO DUPLICATE LIDS REQUIRED.

These Lids are proved by many eminent Gas Engineers to be the most efficient, saving much time, labour, and expense; are opened and closed as quickly and with as little trouble as an ordinary furnace door, and by their use the Retorts are soundly sealed during the whole period of carbonization.

THESE LIDS ARE IN USE AT THE FOLLOWING (AMONG MANY OTHER) GAS-WORKS:—

The Gaslight Company, Beckton (where over 2000 are in use).	The Gas-Works, Royal Arsenal, Woolwich.	The Nottingham Gas-Works.
,, Gaslight Company, Bow Common.	,, Alliance and Dublin Gas-Works.	,, Newcastle-on-Tyne Gas-Works.
,, London Gaslight Company.	,, Edinburgh Gas-Works.	,, Carmarthen Gas-Works.
,, Independent Gaslight Company.	,, Manchester Corporation Gas-Works.	,, Merthyr Tydfil Gas-Works.
,, Phœnix Gaslight Company.	,, Salford Corporation Gas-Works.	,, Ystrad Gas-Works.
,, South Metropolitan Gaslight Company.	,, Rochdale Corporation Gas-Works.	,, St. Alban's Gas-Works.
,, West Ham Gas Company.	,, Liverpool United Gas-Works.	,, Over Darwen Gas-Works.
	,, Birkenhead Gas-Works.	,, Aylesbury Gas-Works.

The Morton's Lid is made circular in form, that being the most convenient and suitable shape. It can be used for Retorts of any section, by adapting the Mouthpiece casting from the D, oval, or other shape, at the back, to circular in front.

The following important Testimonial, among others, has been given:—

The Gaslight and Coke Company. Engineer's Office, 6, Westminster Chambers, Nov. 14, 1871.

Dear Sir,—In reply to your inquiry, I have the pleasure of stating that the whole of the Mouthpieces at Beckton have Morton's Lids attached to them, and they have given us every satisfaction. We have 2160 in use.—I remain, yours truly, (Signed) F. J. Evans.

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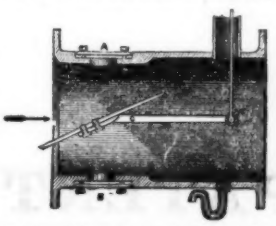

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THE JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, JANUARY 14, 1873.

Notes upon Passing Events.

THE committee who have undertaken to obtain an amnesty or a mitigation of the sentence of the stokers—the innocent men who conspired to put London in darkness if the man employed by *one* company, at Fulham, discharged for insubordination and insolence to his foreman, was not restored—have shown their hands too soon. We have bought our experience of amnesties to the unrepentant pretty dearly in Ireland. There the concession to the prayer of peaceful and loyal humanitarians resulted in giving liberty to rebels to renew their rebellious schemes. The experiment was worth trying; but, as it conciliated no one, it was not encouraging. Amongst the members present at the last meeting to hear Mr. Secretary Bruce's reply to their last application, were Mr. George Potter, who may be considered the professional advocate of the working man, in the Chair; (no one can blame him for taking up a business more profitable and less laborious than handicraft;) Captain Manse, R.N., the feebleness of whose arguments written and spoken in favour of what the French call the "principles of 1789," are only paralleled by the violence of his opinions; the Rev. Mr. Murphy—a name with a very Fenian sound—and those intellectual sympathizers with the Parisian Communists, Professor Beesly and Frederick Harrison. Mr. Bruce's reply is written with unusual decision and clearness. He most properly declines to permit a deputation to air its revolutionary eloquence on a question of mitigation of punishment, any arguments for that course being clearly the proper subject of a written memorial. Mr. Bruce also points out that "the Secretary of State is "not a court of appeal from the decisions of Her Majesty's judges." "If the correctness of the law laid down by the judge at the trial "had been doubted, it was open to the counsel engaged to ask to "have a case reserved for the opinion of the Court for the Considera-"tion of Crown Cases, but that course was not adopted by them." Mr. Bruce also declines to receive a deputation to discuss the intentions of the Government in passing the Trades Union Act; he refers the committee to Parliament which manufactured the laws. A memorial was finally agreed on, which "goes the whole animal;—first argues that the men were not guilty at all, and next that if they were the punishment was excessive, and finally asks for a free pardon or a remission of the sentences on these "helpless men." That last appeal to mercy is truly dramatic—quite French. Of course, they are helpless men now—tried, convicted, sentenced, and in prison. But when they decided to withdraw every stoker from every set of gas-works in London, they did not feel themselves helpless at all—they were, in imagination, the dictators of their prostrate employers. We know that had this subject of a remission of part of the sentence been approached in the peaceful spirit of "let bygones be bygones," it would have had hearty support from the gasholding interest and the middle classes whom Professor Beesly and Mr. Harrison write of as the natural enemies of the working man. But in the present aspect of affairs, when threats of the pressure to be brought on the Government by "ten hundred thousand trades "unionists" are openly made, no sympathy can be expected from the employing class; strict justice and nothing more is all that the convicted stokers can expect. An application for pardon implies regret. As far as we can gather from the speeches of the Trade Committee, their only regret is that they did not succeed in dictating terms of engagement and discipline to the gas companies.

When it is very wet or very dry, we are pretty sure to have a few letters in the daily papers from Mr. Bailey Denton, in which he contrives to convey some useful truths in a tolerably disagreeable manner. When three dry seasons half ruined the cultivators of all highly-farmed light lands, Mr. Denton was *en évidence* to show how every village and every great farm neglected to store up the superfluous rain of winter for the occasional droughts of summer—very good advice, followed, no doubt, by some of Mr. Denton's clients, but still too much neglected. Now that continued moisture has prevailed so long that the Archbishop of Canterbury and his clergy think the time has come for a special interference of Providence, Mr. Bailey Denton steps in again to tell them that "what is one man's meat is "another man's poison," and *vice versâ*—that rain is doing a great deal of good on land properly drained, that all retentive land ought to be drained, that the reservoirs of some springs dried up in the three droughty years are not yet filled, and that rain, after all, produces on properly cultivated farms an effect superior to any known cultivating implement. He has done this in such a tone as to bring down on his devoted head the indignation of every parson in every clay and grazing parish. The effect of this season must be almost ruinous on a great many arable and grazing farms. Very little autumn cultivation was possible, and it is only while we write these lines that any hope of spring cultivation has appeared on the English horizon. The ultimate result will be a great deal more capital invested in draining, in steam cultivation, and in shelter for stock. Money is plentiful, joint-stock companies for railway and mining enterprises are in disfavour with quiet people. No revolution is needed or asked for, for such reforms as would enable every landowner to offer security at little legal expense, and every substantial farmer to obtain the credit a tradesman with the same invested capital in a good business in a leasehold house can always have at his bankers. But before the agricultural world return to those halcyon days (to every one except the labourer), when the toast of liberal landlords and grateful tenants was drunk with enthusiasm at market dinners, we fear that there must elapse a good many unpleasant "quarters of "an hour." We can recall the feelings of depression that hung over the manufacturing and mining interests when Parliament first restrained the work of children.

The Corporation of Sheffield have taken advantage of Mr. Leeman's Act to promote a bill for the compulsory purchase of the Sheffield Water-works. If they succeed in getting the assent of the ratepayers, and pushing their Bill through both Houses of Parliament, they will embark in a speculation of an entirely novel description, in which the ratepayers cannot possibly be better off than they are at present as regards water supply and its cost, and will certainly for many years, if not permanently, be punished soundly in extra rates in order that the Corporation may have the pleasures of addi-

tional patronage. There are several instances in which municipalities have undertaken to supply their towns with water, but they have all been either where there was no water company in existence, or additional supplies have been required which the water company was not prepared to make, and therefore has sold its works at a price agreed. There are also plenty of instances of Acts for the expropriation of land, houses, and other property, in order to make a manifest improvement, such as a canal, a railway, or a new street; but there has never yet been an example of an Act to compel a company to give up its property where there was not any ground for asserting that it had not fulfilled its duties. Sheffield has a constant service of pure water at a very moderate price, which must be reduced by 25 per cent. within fifteen or sixteen years, and, may be, much sooner. The price now is within 25 per cent. of the original authorized rate, which was first reduced by Parliament, and then restored by half after the frightful and inexplicable accident of 1869, which cost the company more than three hundred thousand pounds, and reduced their dividend to 3 per cent. The works executed under the last Act are of so ample a capacity that they will provide for any possible demand within the present generation. One reservoir, which cost a hundred thousand pounds, is at present neither used nor required. Under no circumstances can the water company raise their rates. The Corporation admit that if they succeed in purchasing the works at their own price—which allows nothing for the reasonable expectations of the company of eventually paying 10 per cent., and so recouping past losses, and nothing for the usual 10 per cent. allowed on forced sales—they must impose a rate on all the property in the borough of sixpence in the pound, which sixpence will be in addition to the present water-rates paid by consumers only; but they also seek (and are compelled to make provision under Lord Redesdale's Act) for power to levy a second rate towards a redemption-fund, and a third rate for general purposes. So altogether the ratepayers of Sheffield will not get more water, a more constant supply, or purer water, and they will have to pay a rate of an additional shilling in the pound; for what?—the speculative chance of an eventual profit, and the certainty of a considerable addition to the patronage of the Corporation Water Committee. Patronage—that is the word—which resounds constantly in the ears of these aldermen and common councilmen, just as "proputty, proputty," echoed back from his horse's trot in the ears of Tennyson's Northern farmer. The ratepayers of Sheffield are invited to a game of pitch and toss, in which, whatever be the fate of the water company, the ratepayers must lose their money "for the "benefit of posterity," while the present members of the Corporation will gain additional importance. In fact, this is not an investment to supply the wants of the borough, but a speculation to make money by compelling the company to sell cheap in the expectation of making the ratepayers pay dear. Indeed, when once the works are in their hands, the Corporation will never want an excuse for an additional twopence in the pound, and, as they go to Parliament pretty frequently, there will be no difficulty in slipping in an additional taxing clause. The inhabitants now know the most they have to pay the company for an ample supply of excellent water, and they also know that their price must, at a certain period, and may, at a much ealier period, be reduced. But there is a strong probability that an arbitrator, under all the circumstances of the case, may give the water company 20 per cent. more than the sum on which all the calculations of the corporation are based—viz., a 4½ per cent. dividend. Once embarked in an arbitration, there is no retreat. The corporation cannot compel a sale and fix the price too—they must pay what the arbitrator awards, and that may, and probably will, upset their financial pot. The Manchester Corporation, so often quoted, never publishes any intelligible accounts of its water-works investment—has never admitted what were the losses in compensations to millowners in the droughty years when the supply—the model supply—failed totally; but there is no doubt that the nominal sixpenny water-rate of the Manchester Corporation has been indirectly raised to twenty pence.

The ordinary Frenchman never touches England without making some extraordinary blunder; but the London correspondent of the Paris *Temps* really deserves a prize medal for his article on the English agricultural labourer. M. Assolant was more spiteful but not more mistaken. It is doubtful if this correspondent can read English; it is certain that he never reads the advertising columns of the supplement to *The Times*. There he could have found that landed property to the amount of millions sterling changes hands every year, and that if you have no objection to a very unprofitable investment as regards immediate returns, which has its pleasures, you may lay out any sum from a hundred to a hundred thousand pounds in land. If the correspondent had pursued his agricultural studies a little farther, and read the agricultural newspapers, he would have found that although there is a great deal to amend in the condition of the labourer in certain counties—an amendment that is going on rapidly—the Englishman lives in paradise as compared with the Frenchman who depends on agricultural wages, and there are thousands of Frenchmen of this class. They are clad in a pair of linen trousers with a blouse, wooden shoes, no stockings, and often no shirt; they have no regular meals, and live chiefly on black bread and green vegetables, with a little sour cider or vinegar wine; they get from tenpence to fifteenpence a day; they work from daylight to dark for *seven* days a week; they have no rich squire or parson to fall back on for fuel, blankets, or other assistance; they believe nothing, know nothing, and live like hogs without the food. They have only one resource to improve their condition: to go into the army, or migrate to some large town. The situation of our labourers would long since have been intolerable had it not been for the mischievous Poor Law, local charity, and migration or emigration. The *Temps* correspondent writes that in England land is "inalienable;" that the Duke of Marlborough raises his rents as fast as the land is improved; that "consequently the farmer falls "back upon the labourer, whom he pays miserably, overwhelms with "work; in short, makes a brute beast of him"—statements with scarcely a scintilla of truth in them. The Duke of Marlborough is not a model landlord, like the owners of the Yarborough, Leicester, or Bedford estates; he loves power, and keeps it by annual tenancy and low rents. To put an English labourer on the food, clothing, and hours of a hired labourer in Brittany or Normandy, would breed a riot in a week. Under our system we have liberty of speech and writing; consequently, public opinion is always with the oppressed. In France, the only improvement has arisen from roads and railroads and the rise in the price of produce; all labourers and peasants hate all above them, and know no superior except the police and the priest. In a fine vine-growing climate, the frugal peasant proprietor thrives; in the colder latitudes he is a miserable creature. An English peasant proprietary in the midst of manufacturing profits, with credit unknown on the Continent and an emigration spirit unknown in France, is a wild dream. Where are the sons of the Cumberland statesmen? Making fortunes in the City of London, as warehousemen and drapers. "By their fruits ye shall know them." There is plenty to mend in England, but is there anything to tempt us now in the example of France? Heavy taxes, wasteful armies, no liberty, no public opinion, and a general feeling of distrust between all classes. Such is the result of liberty to destroy, the equality of envy, and the fraternity of hating every one with a shilling more than yourself.

Circular to Gas Companies.

We publish to-day in full the long-expected report of Messrs. Keates and Odling "On Experiments made upon Dr. Eveleigh's "Patent System of Manufacturing Gas," together with remarks by Mr. Mellor, the consulting engineer of the Patent Gas Company. Our readers have been made fully acquainted with the peculiarities of Dr. Eveleigh's process, so we need here only address ourselves to the practical results of the experiments detailed. Two sets of experiments were made at Barnet with the combined system of coal and oil distillation, with the following results:—

	Coal, 1 Ton.	Oil, Gallons.	Gas made, Cubic Feet.	Illuminating Power, Candles.	Sulphur. Grains per 100 Feet.
1	Silkstone	21·3	8700	22·73	6·00
2	„	39·2	9460	21·11	5·51

The temperature of the retorts in which the coal was distilled was observed by the use of Bailey's pyrometer. In the first experiment the heat was 1320° Fahr., but was raised a little towards the end. In the second the temperature was somewhat higher—namely, 1400° Fahr. To this difference in temperature the reporters ascribe the increased amount of gas and the diminished illuminating power; but our readers will not fail to remark that in this second experiment nearly twice as much oil was distilled. It may be remarked also that the heats are considerably in excess of those mentioned in Dr. Eveleigh's specification, which are from 600° to 1000° Fahr. (see page 183 of our last volume). It is hardly necessary to say that the distillation of the coal proceeded with the utmost regularity, but not so the distillation of the oil; one oil-retort was repeatedly choked up with pitchy cinder, and the distillation had to be stopped for the purpose of cleaning it. Another oil apparatus, said to be precisely similar, was never choked. Great stress is laid by Mr. Mellor on the fact that the eduction-pipes were never obstructed at any time. We mention this because reports at one time led us to believe that the eduction-pipes at East Barnet were frequently choked with pitch. Probably the reports originated from accidents such as are here described; but at all events in these experiments no choking of pipes at all occurred. No estimation of the amount of fuel consumed in the first experiment was made, but as regards the second we are told that for the carbonization of a ton of coal 6½ cwts. of coke were burnt, and for the distillation of the 39·2 gallons of oil 1½ cwt. of coke was used; that is, 8 cwts. of coke were consumed in producing 9460 feet of gas, and as the coke produced was 15½ cwts. per ton of coal, it follows that the consumption was 50 per cent. of the production. These experiments were made in April last, and since then Mr. Mellor states that the fuel account has been reduced. It was exceedingly high even for works of the magnitude of those at East Barnet, but this is not necessarily a fault of the Eveleigh system.

We come now to the experiments at Peckham, where the coal and oil distillation were carried on separately, so that the yield and quality of gas from each source could be estimated. In the first of these Silkstone coal was employed alone, the temperature of the retort was 1300° Fahr. The distillation of a ton of coal at this heat yielded 8590 feet of gas of 23-candle power, and 16·4 gallons of oil, with a residue of 14 cwts. of coke. The next experiment was with Clay Cross coal, a ton of which yielded 8399 feet of gas of 20·7-candle power, with 11·9 gallons of oil, and a residue of 14 cwts. 4 qrs. of coke. A third experiment was made with Pelaw Main coal distilled at 1350° to 1400° Fahr. The yield of gas in this case was 8528 feet per ton, with an illuminating power of 19·9 candles. The oil produced amounted to 13·9 gallons per ton of coal, and the residue of coke was 16 cwts. 0 qrs. 20 lbs. per ton of coal. For the reasons mentioned in the report, we take no account of the coke consumed in these distillations.

We come next to the separate distillations of oil for gas, and here must direct the attention of our readers to the apparatus employed for the purpose as described in this report, and figured in the draw-

ing we gave with our number for Feb. 27, 1872. The oil employed was from Silkstone coal; it had a specific gravity ranging from 1000 to 1150. Two hundred and seventy gallons of this oil were distilled over and over again, until only six gallons remained, which could not be vaporized. The results of these repeated distillations were a total production of 25·3 feet of gas and 7·18 lbs. of pitch per gallon of oil, which, taking the weight of the oil at 10 lbs. per gallon, shows that only 3 lbs. per gallon were decomposed. (The mean lighting power of the gas produced was equal to 25·5 candles.) We may stop here to point out that these 3 lbs. of oil are effectually broken up, and for the most part converted into permanent gas, leaving a residue of carbon with the charcoal in the retort. The total amount of carbon separated from the 270 gallons of oil, or rather from the 710 lbs. decomposed, appears to have been 132 lbs. Thus more than one-fifth of the weight of the oil is left behind as valueless carbon. This seems to us a significant fact, which induces us to agree with the reporters in the belief that the oil, differing as it does from ordinary gas tar, could be more profitably utilized. We should have been glad to have had a great deal more information respecting this oil distillation for gas, first as regards the constitution of the original oil, and then as to the constituents of the gas obtained. We must, admit, however, that this is of more scientific than practical interest, and was, perhaps, somewhat beyond the object of the inquiry entered upon by the reporters.

We pass on to the final experiment with Silkstone coal and oil worked conjointly, as at Barnet. In this experiment the yield of gas per ton of coal and 25 gallons of oil was 10,500 feet of gas, with an illuminating power of 24·9 candles. The coke produced from the coal was equal to 14 cwt. 0 qrs. 11 lbs. per ton, and the pitch from the oil amounted to 1 cwt. per 25 gallons. In this case the oil was not distilled over and over again to complete destruction, and we are not told the quantity of residual oil. It is to be remarked that the heat of the coal retort in this experiment was 1550° Fahr. So far for the experiments. Now for the broad results, as summed up by the reporters. It is proved that coal regarded as inferior for gas-making will, when slowly distilled at comparatively low heats, yield a quantity of gas of high illuminating power, little inferior to that obtained at high heats of considerably lower power. "The vice of ordinary "gas-making," it is correctly said, "is the employment of high tem-"peratures." But "against the increased value of the gas" (procured by slow distillation), "there must, however, be set the enhanced "cost of working incidental to the length of time occupied by the coal "in the retorts, and the increased expense of plant, fuel, and wages." As regards the distillation of oil, the reporters express a more decided opinion. A ton of oil and 19 cwt. of coke were required to produce 6267 feet of gas and 14½ cwt. of pitch. A ton of oil at 2d. per gallon is worth £1 17s. 6d., and 19 cwt of coke 12s., together £2 9s. On the other hand, 6267 feet of gas at 5s. 6d. are worth £1 14s., and 14½ cwt. of pitch is worth 22s., together £2 16s., which leaves a balance of 7s. for working expenses, wear and tear, and interest on capital. But the claim put forward by the inventor and the Patent Gas Company has always been that this rich gas is produced at the same or even a smaller cost than poorer gas by the ordinary process; and, unless we are misinformed, the contract with the Barnet Company was entered into with this idea. Now, if we estimate the value of the gas from the oil at 3s. 9d. per 1000, it comes to £1 3s. 6d., and the pitch being added, they make together but £2 5s. 6d., which exhibits a loss of 3s. 6d. on the operation. As we have said more than once before, to know the present commercial value of the process we want the financial results of the workings at Barnet. We are willing to admit that these might not be altogether conclusive, because improvements in apparatus and the working of it are possible. But this much we are bound to assert, that, so far, the pretensions of the inventor are only supported to this extent, that gas of high illuminating power and comparative purity can be procured from inferior coal by distillation at low temperatures, and that gas can be successfully produced from oil, all of which facts were made perfectly clear by Mr. Basford and others years ago.

Little need be said of the remarks of Mr. Mellor. He accepts the conclusions of the reporters, and endeavours to show that they establish the statements of the inventor. Speaking, however, of the distillation of oil, he objects to the separation of the "light, watery oils" from the heavier, which the reporters sought to accomplish as far as possible. We do not exactly know what he means by "watery oils," but we suppose water is concerned. Now, steam passing into the decomposing retort would result in the production of hydrogen and carbonic oxide, the effect of which would no doubt be to keep the charcoal clean, and augment the volume of the gas, but at the expense of the illuminating power. We must conclude here by once more expressing a hope that at the next meeting of the Patent Gas Company the financial results at Barnet will be freely revealed to the shareholders and the public.

The announcement of an increase in the price of gas in the western district, and the polite intimation by the Imperial Company that such a thing is not improbable six months hence in the north-western districts of the metropolis, have set the vestries in those localities in a state of ferment. It is curious to remark how the members of these bodies—for the most part retail tradesmen, who raise the price of their goods on the smallest possible pretext—object to a rise in price in anything supplied to them; and how indignant men who make from 20 per cent. to 200 and 300 per cent. on their goods are at others who can at the most make 10 per cent. (6½ to present investors). These people do not invest in gas shares; they can make more of their money. If ever an advance in price was justifiable it is in the price of gas at the present moment. Coal and iron have enormously increased in price, and to assert that the increased value of products compensates for this advance is simply to display ignorance of the matter. It is, however, of no use to shut our ears to the fact that a serious agitation has begun in the metropolitan vestries. It will, no doubt, end shortly, when the local orators have exhausted their lungs and baseless arguments; but for the moment the state of affairs looks unpleasant. The only vestry with which we have any sympathy is the Kensington, who are still afflicted with cannel gas. This grievance, however, we hope will soon be removed, and peace restored. While, however, the supply of cannel gas is continued, the Chartered Company are bound to furnish 23-candle gas, instead of 20, and no reasonable man could refuse to pay for the increased value. If he choose to consume it in burners which afford but two-thirds the light that might be obtained from the gas, that is his look out; but he might with as much reason object to pay for anything else which he allowed to run to waste in his establishment. It is said, and we have said so ourselves, that London is worse lighted than most foreign cities, where the gas is often much poorer, and always much dearer, but this is the fault of the vestries. Grosvenor Square certainly looks unspeakably dull in the evening, but it could be made much brighter if the Vestry of St. George's would properly arrange twice the present number of lamps. The fact is, the early closing movement has contributed much to the sombre appearance of our leading thoroughfares which now attracts so much attention. The cockney tourist takes his evening stroll along the Paris Boulevards, where the shops are open to eleven o'clock, and every third house a brightly-lighted *café*, and exclaims, "How brilliant Paris, how dismal London!" and he comes home and abuses the gas companies. It is very unreasonable, but unhappily there are lots of people who, some from ignorance, some from malevolence, and others who make a profit by it, stimulate this abuse until the public consider themselves hardly dealt by. One of the last charges brought against the metropolitan companies is having unnecessarily expended nearly one-half their capital. The genius who makes this estimate shows his capacity for dealing with the subject by calculating for 500 *miles of distributing mains* within the districts of the ten companies!

The abstract of the Chief Gas Examiner's quarterly report, which we publish to-day, shows that the companies under his supervision keep their gas well above the statutory quality. The results of sulphur purification at Beckton and Bow are highly satisfactory, but it must be remembered that the system has not been put to the crucial test of very severe cold. Although the stokers strike greatly reduced the *quantity* of gas made at some works, the *quality* seems to have been well maintained. There were a few instances in which the illuminating power of the gas fell below the statutory requirements; but we may presume the chief examiner had no difficulty in certifying that these were the result of "unavoidable "accident."

The Local Board of Boston are greatly excited on the subject of public lighting. The gas company had given notice of an advance of £1 per lamp, and a number of members of the board were inclined to leave the town in darkness rather than pay the demand. In this state of affairs they had recourse to Mr. Silber, who is regarded as the hero of the day—or rather night—and seems to be universally looked up to as the man who is to reduce gas companies to reason. Since then, however, the board and company have agreed to a compromise, and we are glad to see that the company have agreed to light the town by average meter indication, a system which works so satisfactorily in many places.

We have no space to-day to refer at any length to the continued agitation in Dublin respecting the purchase of the gas company by the Corporation, and the conflicting estimates of the probable profits or loss from the purchase. Mr. Cotton, who is certainly no friend to the company, calculates that the Corporation will in a year or two make a large profit by the purchase, while some members of the Corporation, backed now by Mr. George Anderson, would make it appear that the Corporation must be losers. We who have always contended that a company can do as well as, and in a majority of cases does better than a Corporation, do not for a moment believe that the gas consumers of Dublin will benefit by the change of ownership; but Mr. Cotton's estimate confirms our opinion that the bargain entered into is, as we have said, an exceedingly advantageous one for the Corporation.

Manchester, we are inclined to hope, offers an example of a Corporation with a conscience. They make a large profit by the supply of gas to several townships, but at present only some of these share in the benefits derived from the expenditure of those profits. A righteous member of the Town Council has now made a proposal which may lead to a more equitable distribution of the profits, and we hope no legal impediments will stand in the way of the adoption of his proposals; but even then the outlying townships, which contribute largely, will have no share in the advantages.

A correspondent desires to know the reason of the general decline in the price of shares in the metropolitan gas companies. He suspects the existence of a "Gas Ring," and the operations of "Bears." There has, no doubt, been more speculative transactions in the shares mentioned since they have been placed on the Stock Exchange list; but we believe the fall is to be attributed solely to the high rates for coal and iron, which have led holders of shares to think that past rates of dividends would not be maintained.

We are happy to learn that the steam stoker is now in operation at Beckton, where, by the courtesy of the directors of the Chartered Company, it may be seen in action daily.

THE FRAUDS ON THE WOLVERHAMPTON GAS COMPANY.—At the borough sessions last week James Homer, the late secretary of this company, pleaded guilty to several charges of embezzling the moneys of his employers, and was sentenced to twelve months' imprisonment.

Correspondence.

AIR GAS AT THE CRYSTAL PALACE.

SIR,—In the "Circular to Gas Companies" of your last issue it is stated that an extensive experiment of "air gas" is about to be made at the Crystal Palace, and perhaps a few words on the subject may not be out of place at the present time.

As your readers are generally aware, this "*air gas*" is produced simply by forcing air by means of a gasholder, motive-power meter, or similar means, through a closed vessel, which is charged with a highly volatile hydrocarbon, the vapour of which, being conveyed with the air, issues from the burners, is ignited, and produces light.

The process, however, has no pretensions to novelty, having been patented at least thirty times by different persons, and this absence of originality was fully demonstrated in the JOURNAL OF GAS LIGHTING about ten years ago, when an enterprising Frenchman was exhibiting in Aldersgate Street this "new light," or "air gas," under the higher sounding name of "photogenic gas." His object was to form a company, and he succeeded, the capital being £40,000, which was speedily exhausted in *preliminary expenses* and useless experiments, when the *Photogenic Gas Company* was numbered amongst the things of the past.

Beyond doubt the experiment of "air gas," so far as producing light, can be proved to the uninitiated as most successful, for with the spirit of petroleum highly rectified air can be so saturated as to give a light equal to superior cannel gas; but this is very transitory; speedily the rich flame becomes poor, passing, as the lighter vapours escape, from bad to worse, until only blue light exists, and this is speedily extinguished, when the air passes without any result.

On weighing the residue, it will be found that only about one-third of the hydrocarbon has evaporated, the rest being useless, at least at ordinary temperatures; and it may be further stated that all attempts to volatilize the hydrocarbons by means of heat have failed from a number of causes which I need not specify.

But it may be conceived in the forthcoming experiment that every care will be taken—*coûte que coûte*—to have an abundant and constant supply of highly rectified spirit, when we may anticipate a *flaming* report, setting forth the immense advantages of the process. Let, however, the experiment be carried out by impartial persons for a series of hours or days, in proportion to the quantity of liquid employed, then the utter worthlessness of the system will be made manifest, the results will be as described, and the absurdity of "air gas" made evident.

AN ENGINEER.

DEPRECIATION IN LONDON GAS COMPANIES SHARES.

SIR,—May I request your attention to the annexed comparative statement of the prices of shares in each of the following London gas companies—in all of which I happen to be interested—as I find them recorded in the "Share Lists" published by you?

From the "Share Lists" of Metropolitan Gas Companies, in the "Journal of Gas Lighting."

	Jan. 2, 1872.		Dec. 31, 1872.	
Chartered, A	16¼	16¾	14⅞	15¼
Commercial, 1843-1844	172	176	152	155
Imperial	171	173	160	163
Imperial Continental	69	70	61	63
London	168	171	153	156
Phœnix	33½	34½	31	33
Ratcliff	33	35	31	33
Surrey	16½	17½	15⅝	16
Western, now Chartered	17	18	14⅛	15½

I do not live in London, and have no means of learning why there has been such a general, and in some cases such a large fall in the value of shares in the London gas companies during the past year. I assented to the consolidation of the shares of the Commercial into stock, and to the amalgamation of the Western with the Chartered, on the assurance by the directors that both measures were likely to be beneficial to the shareholders, instead of which both have been followed by a serious fall in the market price. At all the recent meetings, the governors and directors have been exuberant in their congratulations of the success of their operations. How is it that the public does not put confidence in them? Of course I know that coal is dear, and that for a few days the companies were troubled by strikes; but the depreciation to which I refer began before coal rose so much and before the strikes were threatened, and there is no doubt as to the power of the companies to advance the price of the gas they make in proportion to any advance in the price of the coal it is made from. There must surely, then, be some other adverse influence at work. Is there a great "bear" account, a great "Gas Ring," or any other hocus-pocus going?

I have no doubt you would confer a favour on many other uninformed and distant shareholders like myself by tracing the origin and progress of the serious depreciation in London gas property during the year 1872, and explaining to what causes it may be attributed, and how far these are or are not legitimate.

Jan. 2, 1873. A PROVINCIAL SHAREHOLDER.

Review.

THE LAWS RELATING TO PUBLIC HEALTH.

The Public Health Act of 1872 threw half the local authorities in the country into a state of consternation, and they have hardly yet recovered from their bewilderment. In general, we believe, a "masterly state of inactivity" has been induced; but this cannot long be maintained. No doubt this state of things has arisen partly from ignorance of the various duties imposed on local authorities by the Act. A member of an "urban sanitary authority" has, we read, "to deal in one way or another with upwards of fifty Acts of Parliament," which must be sufficiently bewildering to ordinary members, even when under the guidance of an experienced legal clerk to the board. For the enlightenment of both, Mr. Chambers, barrister-at-law, has compiled "A Digest of the Statutes relating to the Public Health,"* which deserves to be in the possession of every member and every clerk. It is one of the most useful works ever compiled; and has the additional merit (rare in the case of law books) of being exceedingly cheap. The present volume is intended only for members of urban authorities; another applicable to rural authorities is in the press.

LIVERPOOL GASLIGHTERS SOIREE.—The sixth annual *soirée* of the Liverpool gaslighters took place on the evening of the 1st inst., at Hope Hall. A tea, provided by Mr. Perkins, and of which the gaslighters, their wives and families (numbering in all about 400) partook, commenced the proceedings, and this was followed by a concert. Mr. J. Oliver Jones presided, and addressed the assembly briefly but appropriately. The concert afforded great delight, and was taken part in by Mrs. Boardman, Mrs. Fargher, Miss Fargher, Miss Louise Lloyd, Messrs. J. R. Spencer (conductor), Fell, J. Bradley, Day, Kissack, and J. Tomlinson.

* "A Digest of the Statutes relating to the Public Health, for the Use of Members of Urban Sanitary Authorities; with Table of Cases and a copious Index." By G. F. Chambers, of the Inner Temple, Barrister-at-Law. London: Stevens and Sons, 1872.

Legal Intelligence.

SOUTHWARK POLICE COURT.—FRIDAY, JAN. 3.

(*Before Mr.* PARTRIDGE,)

DEFRAUDING THE PHŒNIX GAS COMPANY.

Bernard Butler, a gas-fitter, of 89, Royal Road, Kennington Park, was summoned by Mr. Drane, the arrears collector of the Phœnix Gas Company, under the 18th section of the company's Act, for fraudulently using gas after being disconnected by one of the servants of the company.

Mr. DRANE said that at the defendant's request the gas was laid on at his house on the 14th of May last, and a meter supplied. He allowed the gas-rent to get into arrears, and as witness was not able to obtain payment, by direction of the secretary it was disconnected on Nov. 7. He at that time owed two quarters gas-rent.

Frederick Wells, a service-layer in the employ of the company, said that according to directions he received he proceeded to defendant's house on Nov. 7, and disconnected the gas from the meter, and placed a cap on the service-pipe.

George Bryant, an inspector in the company's employ, said he received information that the defendant was burning gas after it was disconnected, and on the 23rd of last month he saw the gas burning. He called and saw the defendant's wife, and told her the consequences of such an unlawful act, and that proceedings would be taken against her husband. The gas was laid on for him on May 4, and cut off on Nov. 7. He had no right to connect it without the consent of the company.

The *Defendant* contended that he had not committed an unlawful act. His gas was not cut off, nor was the meter removed from the inside of his house. Not only that, on the same evening that the man put the cap on the service-pipe he took the money to the company's office, and there was no one to receive it. He, therefore, went on using the gas.

Mr. DRANE informed his worship that the defendant was a gas-fitter, and not only knew the law, but had every opportunity of connecting the gas without the knowledge of the company.

Mr. PARTRIDGE told the defendant that he had committed a fraud on the gas company, and, as a caution to him and others, he fined him 10s. and costs, and in default, committed him for seven days.

Miscellaneous News.

QUALITY OF THE GAS SUPPLIED TO THE METROPOLIS.

Dr. Letheby, the Chief Gas Examiner appointed by the Board of Trade, has presented his reports on the quality of the gas supplied by the Chartered, Imperial, and South Metropolitan Companies during the past quarter. The general results of the testings at the various stations are exhibited in the following table:—

	Stations.	Illuminating Power. Candles. Max.	Min.	Average.	Sulphur. Grains per 100 Feet. Max.	Min.	Average.	Ammonia. Grains per 100 Feet. Max.	Min.	Average.
Chartered Company.	Beckton	18·1	14·2*	17·00	14·5	9·2	11·52	1·5	0·2	0·69
	Bow	18·6	16·4	17·31	18·5	3·3	6·70	2·0	0·0	0·50
	Blackfriars	19·2	15·5	17·31	26·7	8·6	16·10	1·7	0·0	0·12
	Westminster	19·3	16·1	16·76	29·0	11·5	21·55	1·0	0·0	0·42
	Pimlico (cannel)	27·6	19·8	24·25	18·1	5·7	10·38	6·7	0·0	0·42
Imperial Company.	Fulham	18·9	12·9*	17·23	38·6	26·9	33·19	7·1	0·0	0·69
	St. Pancras	17·4	14·5	15·85	37·6	26·1	32·04	0·3	0 0	0·05
	Haggerston	17·5	13·2*	16·07	32·4	22·9	27·32	0·2	0·0	0·02
South Metropolitan		17·4	15·2	16·24	39·6	28·3	33·72	0·0	0·0	0·0

* These numbers occurred during the strike of the stokers.

The effects of the stokers strike are not so marked in the tables as might have been expected. Testings could not be made for a few days at some of the stations of the Chartered Company, in consequence of deficiency of pressure; but they were not interrupted at Beckton, nor at Cannon Street. Deficiency of illuminating power was reported on only two occasions in Beckton gas, and only once in Blackfriars gas. Testings of the Fulham gas of the Imperial Company were interrupted for two days, and a deficiency of illuminating power reported on a third; but at the St. Pancras station of the same company no interruption occurred, and the illuminating power of the gas was always above the statutory requirements. The Haggerston gas was below the standard on but two occasions.

THE PARA GAS COMPANY.

The Ordinary General Meeting of this Company was held on Monday, Dec. 30, 1872, at the Offices, 34, Leadenhall Street—Mr. ARTHUR CLAY, the chairman, presiding.

The SECRETARY having read the notice convening the meeting, the report, which was as follows, was taken as read:—

The directors are happy to be able to report favourably of the position and prospects of the company.

In accordance with the powers vested in them, and after careful consideration, your directors declared the usual interim dividend at the rate of 5 per cent. per annum, on the paid-up capital in June last.

The works of the company have been maintained in a state of perfect efficiency, and are equal to the production of a far greater quantity of gas than is at present consumed. The very small amount of gas lost by leakage is a striking proof of the condition of the works and mains.

The sale of coke shows again a great improvement in revenue, as compared with last year.

The gas-fitting store, alluded to in the last report, has been occupied by the company, and already shows, not only by the diminution of rent, but also by the increase of gas-fitting business, the advantage to the company of having a store of their own situated in a good quarter of the town.

The new coal wharf is completed, with the exception of the erection of the "lift" machinery, which was despatched from this country in October last, and will result in the saving of considerable expense in landing and storing coals. The removal from the former wharf was ordered by the Government, and the purchase of the land for the new site was reported to you last year.

The rate of exchange up to this financial year shows a further improvement as compared with the average rates of the previous twelve months.

The revenue derived from rentals by private consumers shows a most satisfactory increase as compared with previous years, and this increase being steadily maintained year by year is a most promising feature.

At the close of this year the company's manager, Mr. Alexander Fairlie Wilson, will, at his own request, retire from his present position of manager, and assume the post of consulting engineer of the company, resident in Pará.

A new manager, Mr. Charles Gandon, formerly manager of the Bombay Gas-Works, of whom the directors have every reason to form the highest opinion, has been appointed, and is now on his way to Pará.

The directors cannot allow Mr. Wilson to retire from office without expressing, in the most public manner possible, their appreciation of the great ability and tact with which he has conducted the whole business at Pará since the commencement of the company. Under his sole superintendence a considerable amount of new capital has been most advantageously expended. The first few years of the life of such a company are always attended with considerable difficulties and dangers, demanding the continual exercise of temper and tact in its manager to meet and overcome them; these difficulties in this case, have been frequently aggravated by the bitter and groundless attacks of the Pará press, on the company, and on Mr. Wilson personally. The present state of the company is a proof of the way in which these difficulties have been surmounted.

It will be satisfactory to the proprietors to feel that in his new position Mr. Wilson will still be able to render effective service to the company.

In view of the proposed retirement of Mr. Wilson, and the consequent change in the management, it was considered unnecessary to retain the services of the sub-manager, Mr. Hunter, who has consequently retired; the thanks of the company are due also to this gentleman for the very efficient manner in which he has discharged his duty to the company during his term of service.

The English apprentices who were sent out in December, 1867, have proved of the greatest assistance to Mr. Wilson in the conduct of the company's affairs.

The results of the past year have not been arrived at without drawbacks, the chief one being the enormously increased cost of carbonizing materials; then, again, the general trade of Pará is reported as having been dull in the extreme, and Mr. Wilson, after stating that. "The past has been the most unfavourable year of my experience of Pará," goes on to say. "I believe that almost every Pará import or export house will show for the year ending Dec. 31, 1872, a considerable diminution of trade as compared with the previous year, and I need not point out that when this occurs, it generally reacts unfavourably upon the circulation of money in the place."

Notwithstanding these drawbacks, the company has made a very steady and satisfactory progress.

Upon a careful comparison of the receipts and expenditure of the company for the half year ending Sept. 30, 1872, the directors recommend a dividend for the present half year at the rate of 7 per cent. per annum, free of income-tax.

Two of your directors, viz., Mr. Joseph Quick, and Mr. Henry Whiting, retire by rotation, but are eligible for re-election, and offer themselves accordingly.

Mr. Ernest Oswald Coe, and Mr. Joseph Quick, jun., the auditors of the company, retire from office, but are eligible for re-election, and offer themselves accordingly.

Dr. *General Balance-Sheet, Sept.* 30, 1872. *Cr.*

Authorized capital.	£175,000			Works, including extensions, furniture, &c.		£138,429	9 8
Less not called up.	10,990			Gas-fitting capital		18,548	0 10
		£164,010	0 0	Lighter capital		1,732	14 11
Debenture account		2,500	0 0	Stores		1,301	11 5
Loans		1,000	0 0	Coals		6,583	11 0
Gas-fitting reserve account		2,390	3 8	Public lights and residual products		7,986	18 6
Fire insurance-fund		301	17 11	Suspense account		70	0 0
Liabilities under bills payable		2,343	9 9	Mauá and Co.	£16 17 7		
Ditto to sundry creditors		1,782	12 2	A. F. Wilson—Pará petty cash	72 14 3		
Profit and loss		5,937	5 3	Glyn and Co.	740 16 5		
				Secretary — London petty cash	7 13 1		
						838	1 4
				Bills of Exchange, in hand		4,755	1 1
		£180,265	8 9			£180,265	8 9

Dr. *Revenue Account for the Year ending Sept.* 30, 1872. *Cr.*

Wages, incuding lamp-lighting, purification, and carbonizing	£4,189	0 8	Public lamps	£11,446	6 10	
Coals & wood for carbonizing	7,990	11 7	Private lights	7,751	15 11	
Directors attendances	800	0 0	Meter, &c., rentals	896	8 8	
Salaries to officers	1,943	11 8	Public establishments	524	3 4	
Retorts	430	1 4	Illuminations	963	8 11	
Rent and taxes	398	13 11	Tar	272	5 8	
Office expenses, stationery, Printing, &c.	185	18 9	Coke	3,366	15 1	
Repairs	645	7 1	Exchange	377	13 8	
Interest and discount	97	15 4	Gas-fitting revenue	1,080	9 0	
Debenture interest	120	0 0	Lighter revenue	506	7 6	
Fire insurance reserve	80	0 0				
Apprentices	399	4 3				
Law charges	112	10 0				
Sundry charges	317	8 3				
Travelling expenses	278	2 1				
Profit and loss	9,197	4 8				
	£27,185	14 7		£27,185	14 7	

Dr. *Profit and Loss Account.* *Cr.*

Interim dividend, declared June, 1872	£4,036	18 2	Balance brought forward	£5,452	9 10	
Balance available for dividend	5,937	5 3	Less amount of dividend declared Dec. 16, 1871	4,675	11 1	
				£776	18 9	
			Revenue	9,197	4 8	
	£9,974	3 5		£9,974	3 5	

The CHAIRMAN formally moved the adoption of the report and accounts.

Mr. JOSEPH QUICK seconded the motion.

The CHAIRMAN having invited questions,

Mr. PILLANS asked for information as to the disposal of the services of the sub-manager.

The CHAIRMAN: If no other gentleman has any question to ask with regard to the report, I will first answer, as well as I am able, the question asked by the honourable proprietor. In view of the change of management, which, as you will see by the report, has been carried out this year, it was considered that it would be no longer necessary, as Mr. Wilson assumes the post of consulting engineer, to retain the services of the sub-manager, Mr. Hunter. I may mention, gentlemen, that with regard to the change of management, the arrangements are not fully completed. As yet we are not quite aware as to whether the apprentices who went out in 1867, and whose time of service has now expired, will remain in our service or not. I trust that they will, as they have learnt the business, but we are not yet in receipt of full particulars; but at the same time I may say that in all probability the change of management will enable us to effect a certain amount of saving. Since last year, as you see, we have changed our offices. So much of our business, being shipping business, is conducted in the City, that it was thought advisable to change the site of the offices, and we were fortunately able to obtain these. Our late offices, which we hold for a short period, are not let, but we hope to be able to let them, and when we do we shall effect a considerable saving in rent of offices. The gas-fitting store, which is alluded to in the report, has, as you see, been occupied by the company, and our manager, Mr. Wilson, considers that a large part of the increase in our revenue from that source is owing to the improved position of our store. The full amount of saving in rent from that source is not shown this year, but will appear in our next year's accounts. I will just allude to the land which we have purchased at our new coal wharf. The work there is proceeding very satisfactorily, and our manager informs me that there will be no difficulty in getting rid of the portion we find we shall not require, at a very considerably increased price. The rate of exchange, as you see, has risen, which is, of course, satisfactory, as showing that the state of the country is improving. The private consumption of gas has increased considerably, although the increase is not, perhaps, quite what could be wished, but no doubt as the town increases in prosperity so will the private consumption of gas increase. At our last meeting, our attention was drawn to the great cost of wages and salaries in Pará. I have received a letter lately from a gentleman with whom I am acquainted, and who is now resident in Pará, and I hope you will allow me to read a few words fro that letter, as exemplifying the rate of living. [The chairman then read an extract from the letter, showing the very high price of all necessaries in Belem. He also referred to the claim against the Government for unlighted lamps, alluded to at the last meeting, and was able to make the satisfactory announcement that this claim had been settled in full.] I have butllittle more to add. I am happy to be able to congratulate you upon the real prosperity of the company, of which it is a satisfactory proof that notwithstanding the enormously increased cost of coals, and the fact that the past year in Brazil was commercially a bad one, and notwithstanding that our capital has been considerably increased during the past year, we are yet able to propose an increased dividend.

The resolution was then put to the meeting and unanimously adopted.

The CHAIRMAN, in reply to questions, said a slight increase had been made in the charge for gas per 1000.

A resolution authorizing the dividend was then agreed to.

On the motion of Mr. GRAHAM, Mr. Joseph Quick and Mr. Henry Whiting, the retiring directors, were re-elected.

On the motion of Mr. PILLANS, Mr. Ernest Oswald Coe, and Mr. Joseph Quick, jun., were re-elected auditors.

Mr. H. P. STEPHENSON, in proposing in flattering terms a vote of thanks to the chairman and directors, called attention to the importance of utilizing local coal in Brazil, and for some schemes on foot with that view he asked the co-operation of all interested in the Brazilian gas companies. He said, however, that railways and tramways were necessary to bring the coal down for use.

The CHAIRMAN, in acknowledging the vote, said Mr. Stephenson's remarks should have the best attention of the board, but hitherto they had been unable to hear of local coal suitable for gas making.

A vote of thanks to the secretary and officers terminated the brief proceedings.

DR. LETHEBY ON THE WATER SUPPLY OF LONDON.

During the last month Dr. Letheby, the Medical Officer of Health for the City, has presented to the Commissioners of Sewers his 24th annual report on the sanitary condition of the City. Referring to the water supply, he says: "This, as usual, has been the subject of regular inquiry, the investigation having been extended to the quality of the water supplied by each of the metropolitan water companies. The proportions of saline matter dissolved in the water supplied by the Thames companies has ranged from 18·88 grains per imperial gallon, in the case of the West Middlesex Company's water, to 19·66 in that of the Lambeth Company. The average amount of saline matter in the New River Company's water has been 18·97 grains per gallon; while in that of the East London Company it has been 20·04 grains, and in that of the Kent Company 27·21 grains. The hardness of the water has ranged from 14·6 degrees to 20·2; and the quantity of oxygen required to oxidize organic and other oxidizable matter has been less than the hundredth part of a grain per gallon of the water derived from the chalk wells of the Kent Company, and about a tenth of a grain in that derived from the Thames. The saline and organic ammonia obtainable from a gallon of water by Wanklyn's process has never exceeded the hundredth part of a grain. Four of the companies—namely, the West Middlesex, the Kent, the New River, and the East London—have constantly supplied water free from turbidity, even when examined in large volume, as in a glass tube two feet in length; but the water of the Grand Junction, the Chelsea, the Lambeth, and the Southwark and Vauxhall Companies has been frequently turbid. This has arisen from unusual floods in the river, and from a want of storeage capacity in the reservoirs of the companies. Provision, however, is being made to remedy this defect, so that objectionable flood waters may be diverted from the supply. Taking the population of London at 3,311,298, it will be seen that the average daily supply per head ranged from 30·5 gallons in January to 36·2 gallons in July; and that the quantity supplied to each house was rather more than 218 gallons a day. About sixty million gallons of each day's supply were derived from the Thames, about forty million gallons from the New River and the River Lea, and the remainder from the chalk wells of the Kent Company. In accordance with the provisions of the Metropolis Water Acts of 1852 and 1871, the Board of Trade, after inquiry into the matter, have sanctioned the regulations made by the companies for the purpose of preventing waste, misuse, undue consumption, and contamination of water supplied by them; and amongst other things the regulations prescribe the size, nature, and strength of the pipes, cocks, cisterns, and other apparatus to be used in every house, and they interdict all arrangements that may lead to waste, or misuse, or contamination of water. These regulations came into force on the 10th of August last, and the penalty for refusing or neglecting to comply with them, or for wilfully violating them, is a sum of money not exceeding £5. It is provided, however, that all existing fittings which shall be sound and efficient, and which are not required to be removed or altered under these regulations, shall be deemed to be prescribed fittings under the Metropolis Water Act, 1871; but gradually more severe regulations will come into operation with the view of providing for a constant supply; for under the Act of 1871 it becomes the duty of the Metropolitan Board of Works and of the corporation of the City, after giving due notice to the water companies, to bring the whole of their districts, part by part, under constant service. It is also in the power of any company, after due notice to the metropolitan authority, and after the expiration of at least four months from the date of such notice, to bring about the same results. At the eastern end of London this has already been done by the East London Water-Works Company, who have given notice to the Metropolitan Board of Works of their intention to bring under constant supply, on and after the 25th of March next, the whole of the premises in the block of buildings between Hackney Road, Cambridge Heath Road, Church Street (Bethnal Green), and Shoreditch High Street. This block contains 6273 houses, or thereabouts, and it appears to be the intention of the company to deal in the same manner with other parts of their district, including the City. The public must be prepared, therefore, for considerable alterations in the state of their fittings, so as to adapt them for constant service; and if such alterations are not made within two months after notice from the company, the company may enter the premises and do the necessary work at the expense of the consumer or owner, or the supply may be cut off and the premises proceeded against as a nuisance, and the person in default liable to a penalty of £5. In view, therefore, of such obligations, it behoves the public to make provision, with as little delay as possible, for the adaptation of their fittings to a constant service, seeing that they have been clamouring for this for many years past, and that their wishes may at any moment be realized.

A CHAPEL TURNED INTO A GASOMETER.—At Southminster, Essex, on Friday, the 3rd of January, soon after ten o'clock, the manager at the gas-works noticed a rapid diminution of the gas in the gasometer, and the recharging of the retorts twice during the succeeding twelve hours had no effect in altering the condition of the holder, which had emptied itself all night as fast as the gas had been made. On the following morning, about eleven o'clock, this circumstance was communicated to one of the directors, who had casually a few minutes previously heard that there was a smell of gas outside the Congregational Chapel, and the chapel, on being opened, was found full of gas! The burners of four star pendants from the ceiling, with eight burners to each, had been accidentally left open since the previous evening, and the gas poured out of these 32 burners without let or hindrance. It may be considered so far fortunate that no other bad result accrued than the inconvenience the consumers experienced on Saturday evening by a deficient supply.—*Colchester Mercury.*

METROPOLIS GAS SUPPLY.

KENSINGTON PARISH.

A Conference of Ratepayers was held in the Vestry-Hall, on Tuesday, Dec. 31, to determine the best course to be adopted in order to resist a rise in the price of gas in the district, of which notice has been given by The Gaslight and Coke Company. Mr. H. GIBBONS occupied the chair, and there was a numerous attendance.

The CHAIRMAN, in opening the proceedings, observed that they had met together to resist the impost of a permanent increase in the price of gas in future consumed by the ratepayers. It would be in the recollection of most of those he had the honour to address that some time since—either last or the previous year—the price of gas was fixed by the company then supplying the district at 5s. 6d. per 1000 cubic feet, but that, owing to the action taken by the vestry of Kensington, the price was reduced to 5s., the figure at which it now stood. That company was now merged in or amalgamated with The Gaslight and Coke Company, which had its business governed by certain Statutes quite different from those which applied to the Western Gaslight Company. The Metropolitan Board of Works were successful in 1868, when The Gaslight and Coke Company sought further parliamentary powers, in getting inserted in the Act a clause which placed the company under similar provisions to those which governed the City companies, and, as the amalgamation he referred to had now been effected, the consumers of gas in that district had every right to enjoy the same privileges which the City companies enjoyed. Gas was supplied in the City at 3s. 9d. per 1000 cubic feet, that gas having an illuminating power of 16 candles. He left it to the meeting whether that was not as good as—indeed, it was probably better than—the gas usually supplied to Kensington and the West-end. He questioned very much whether they ought to pay more than 3s. 9d. for their gas; but, indeed, because it was called cannel gas—that was, gas made from cannel coal—they had to pay a higher price than for the ordinary gas. The Legislature had laid it down that they should pay 4s. 8½d. for cannel gas, and yet they were actually paying 5s.; and now the company told them that they were about to ask the Board of Trade for a revision of the scale of charges, which really meant looking for an increased price. Therefore it was the duty of the consumers to meet the companies when they came before the Board of Trade. The consumers should show that the company had no pretext for charging more than 4s. 8½d. for gas, notwithstanding that the companies would endeavour to show they were justified in charging 5s. 6d. per 1000. Three commissioners would be appointed by the Board of Trade, who would carefully examine the books of the companies, and hear both sides of the question. The aggression should be resisted by the ratepayers and consumers, and, if they were unanimous, they must succeed. Sir Henry Hoare, one of their members, had sent an apology for non-attendance, and the Secretary of the Board of Trade had written to say that no application had yet been made by The Gaslight and Coke Company as to the proposed increase of price.

Mr. A. TAYLOR then proposed the following resolution:—"That this meeting strongly protests against the threatened increase in the price of gas, and is of opinion that gas supplied by the City of London and other gas companies at 3s. 9d. per 1000 is as good, if not better, in quality, and more suitable to the wants of the parish than the gas supplied by the Western Gaslight Company as cannel gas.

The resolution, which was seconded by Mr. COLE, Q.C., was unanimously carried.

A resolution requesting the chairman to sign the first resolution, and to forward copies to The Gaslight and Coke Company, the Board of Trade, the Board of Works, and the Western Gaslight Company, was next moved by Mr. COLBORN.

Mr. YELVERTON seconded the resolution, and remarked that the difference between 4s. 8½d. and 5s. 5d. represented an increase of £1500 to the rates, which to them, heavily rated as they were, was a serious matter.

Sir C. W. DILKE, M.P., having referred to the successful efforts made in 1869 to reduce the price of gas, expressed a hope that the ratepayers and consumers would defeat the present attempt of the companies by united action. He begged to move the appointment of the following standing committee to carry out the foregoing resolutions:—Sir Henry Hoare, M.P.; Sir C. W. Dilke, M.P.; Mr. R. Freeman, Major-General Boileau, Rev. J. P. Gill, Mr. R. Y. Yelverton, Mr. Walter Morrison, and the vestry representatives of the Notting Hill, Brompton, and town wards of the district.

Dr. WEBSTER seconded the resolution, which was agreed to. Mr. T. G. Sivell was elected to act as honorary secretary to the standing committee.

The proceedings closed with cordial votes of thanks to the chairman and Sir C. W. Dilke, M.P.

BAYSWATER.—A public meeting was held in the Victoria Hall, on the 7th inst. to protest against the rise in price of gas. Mr. Kiell occupied the chair, and a similar resolution to that adopted by the Kensington Vestry was passed. Major Hall suggested that if the company would not reduce the price the consumers should apply to Parliament for power to make their own gas. Mr. Gilbert moved a resolution appointing a deputation to wait on the Metropolitan Board of Works and the Board of Trade to ask that a commission of inquiry should be appointed under the Act of 1868, with a view to the revision of the tariff and the quality of the gas. Mr. Durrant seconded the motion, which was carried. Sir Henry Hoare, M.P., said he had always given much attention to the supply of gas and water for the district. He sympathized with the objects of the meeting to protest against an imposition sought to be forced upon the ratepayers by a powerful company. He would, in conjunction with his colleague, Sir Charles Dilke, represent the views of the ratepayers to the Board of Trade.

On Friday evening a public meeting of the inhabitants of South Kensington was held at the Gunter Hall, Fulham Road, Chelsea, "to adopt measures in furtherance of the opposition to the uncalled-for increase of price upon the gas consumers of this district, and in support of resolutions passed at numerously attended meetings in other parts of the parish. Also to appoint gentlemen to join the deputations already formed upon the subject." Sir ALFRED SLADE, Bart., occupied the chair.

The CHAIRMAN, in opening the proceedings, said they met together that night to adopt measures in opposition to the uncalled-for increase in the price of gas, and to endorse resolutions passed at meetings held in Town ward and in Notting Hill ward. If there was one thing more grievous than another it was the entire monopoly of a necessary of life. Unfortunately in this great city they were obliged to be under the monopoly of the gas and water companies. It was the duty of the Legislature to see that the gas companies did not get more than a fair profit. In the opinion of most people the price proposed to be charged by The Gaslight and Coke Company was excessive. If the company had suffered loss through mismanagement it was their fault, and not that of the gas consumers. In the late strike no doubt there were faults upon both sides, and he failed to see any reason why they should put their hands into the pockets of the ratepayers to recoup themselves for any loss they had sustained. In other parts of London good gas was supplied at 3s. and 3s. 6d. per 1000 feet. In the City of London the price was only 3s., and surely what was good enough for the City was good enough for Kensington. They could in this dilemma use their influence in Parliament to assist them out of it. A general election was at hand, and Parliament in consequence was much more likely to attend to petitions from ratepayers than they would be at any other time. There was a great loss owing to the gas companies supplying parishes at a long distance from their works. The Imperial Gas Company, whose works were a short distance from that hall, supplied the other end of London, and that, he contended, caused a great waste of money. He thought a parish like Kensington might start a gas company of its own, and, in his opinion, they would do no good unless they let the companies know that they could do without them. He was of opinion that they could manufacture gas for their own consumption at the rate of 2s. per 1000. Then there was another course they could adopt—they could take the course adopted by other people, and strike. They had only to say that they would agree for a certain number of days not to use any gas at all. What would the gas companies then do? They must keep up their establishments, and if the gas consumers would only hold out for a month, they would entirely beat the companies. Mineral oils had been brought almost to perfection, and if they adopted the use of lamps they would give a stimulus to that class of tradesmen who had been so generally injured by the co-operative stores. He concluded amidst cheers by advising them at once to go to Parliament upon the subject.

Mr. T. G. SNELL said an agitation was made to increase the price of gas in consequence of the increase in the price of coal; but in the City of London the price of gas remained the same, because they knew right well that the City would protest in the strongest terms if any such increase was made. Simply because Kensington was a well-to-do neighbourhood they were thus attacked by the gas companies. Speaking of cannel coal, he contended that the so-called cannel gas was composed of seven-eighths of common gas to one-eighth of cannel. The gas companies had now abandoned their claim for fivepence extra per 1000, but now the gas consumers would demand for a revision of the prices, and claim to be supplied at 3s. 9d. per 1000. The town of Manchester was supplied at the rate of 3s., and then a profit of something like £100,000 per annum was made. During the last year all the great improvements that had been effected in Manchester had come out of the profit upon the sale of gas. That day he had referred to the share list, and he found that shares in the Western Company, of which but £10 had been paid up, were marketable at £25, and were paying dividends and bonuses of £10 annually. That showed the large profits made out of the manufacture of gas. Gas was now a necessary, and was no longer a luxury, and the consumers ought to be able to purchase it from any company they might think fit, just as they went to their butcher or their baker.

Dr. DANIELS then moved "That this meeting strongly protests against the threatened increase in the price of gas, and is of opinion that the gas supplied in the City of London and other metropolitan parishes at 3s. 9d. per 1000 feet is as good, if not better, in quality, and more suitable to the wants of this parish, than the gas at present supplied by the Western Gaslight Company as 'cannel coal gas.'" He pointed to the excellent light they had in the room, for which only 3s. 9d. per 1000 feet was paid. Kensington unfortunately had been selected for the use of the cannel gas. He contended that the reason why the price of gas was raised was, because one of the companies could not make both ends meet—then an amalgamation took place, and now they were trying to make Kensington make up the deficiency. He next alluded to the cost of the manufacture of gas, submitting that cannel gas was much cheaper in that respect than common gas. He admitted that the coke obtained from cannel coal was not so valuable as that got from ordinary coal, yet the machinery requisite for the manufacture of the former was so much cheaper than that for the latter that cannel ought to be the cheapest. They were told that the cannel gas gave a light equal to 23 candles, but that was "a mockery, a delusion, and a sham."

Mr. PAINTER seconded the motion, which was carried unanimously.

Mr. COOK (a vestryman) moved the appointment of a deputation from this ward to wait upon the Metropolitan Board of Works at their meeting on Friday next. He said some two years and a half ago the vestry of Kensington took up the question of the price of gas, and it was reduced 5d. per 1000 feet. The reduction took place from the 1st of January, 1871, but it was a strange thing that the bills of the consumers increased instead of diminishing. He strongly deprecated monopolies, and asked why, upon one side of the Fulham Road they should be compelled to pay 5s. per 1000, when upon the other but 3s. 9d. was paid. The gas supplied in Kensington was no better than that supplied in Chelsea parish. The vestry had always been dissatisfied with the supply of gas, but Dr. Dudfield, the medical officer of health, had reported it to be equal to the required standard. He urged them to take steps to get the common gas, for he was quite certain they would be satisfied with it, and they would also save money.

Mr. PARSONS supported the motion, and said the gas supplied in Kensington was much inferior to that supplied in Chelsea. For several months prior to the strike the gas was very bad. The gas companies had been well treated by the shopkeepers during the strike, and they were now rewarded by a threatened increase in the price of gas. He was surprised at the ingratitude of the companies, and he hoped the resolution would be carried.

Mr. PROWSE supported the motion, which was agreed to, and the deputation having been appointed, a vote of thanks to the chairman closed the proceedings.

MARYLEBONE VESTRY.

At the Meeting of the Vestry on the 2nd inst.—Mr. Churchwarden DREW in the chair,

The following letter from the Imperial Gas Company was read:—

Imperial Gaslight and Coke Company, 33, John Street, Bedford Row, W.C., Dec. 27, 1872.

Dear Sir,—On behalf of this company I hereby give you notice to terminate, on the 30th of June next, the contract under which the company at present supplies gas to the public lamps in your parish.

Under the Metropolis Gas Act the contract might be determined by one month's notice, but the directors think it expedient and more courteous to the vestry to give a six months notice, as they have already done to the parishes with whom they were under special contract to do so.

Some of the newspapers, in alluding to the notices already given, have erroneously assumed that they indicate a settled intention on the part of this company to raise the price of the gas supplied to the public lamps. I am instructed to inform you that no such determination has been arrived at as yet, though the great advance which has taken place in the price of coal and of material employed in gas-works, as well as in wages, may so effect the company's financial position as to compel them to equalize the charge for gas supplied to the public lights and private consumers, as is done by almost every other metropolitan company.

It is with a view to this contingency that the above notice has been given, but under any circumstances it may be questioned whether this company ought to continue to supply the public lamps at the rate of 6d. per 1000 feet, or therenbouts, less than is charged to the private consumer, to the manifest prejudice of the latter. It is believed that no such distinction is made in the other districts of London, and my directors venture to submit these considerations to the notice of your vestry; but at the same time I have to repeat that the notice hereby given, though a necessary precaution, is not the result of any actual resolution on the part of this company to raise the price of gas supplied to the public lamps.—I am, dear sir, yours faithfully,

To the Vestry-Clerk of the parish of St. Marylebone, Vestry-Hall. HARRY CHUBB, Secretary.

Mr. TAVENER said that, notwithstanding this letter, there was some reason for the public to suppose that the price of gas would be raised, and in Kilburn the people had received a positive notice that 5d. per 1000 cubic feet would be put on. If public opinion could keep the price down, they ought to move in the matter.

Mr. WINGFIELD did not think they need take much notice of the communication just yet. They had six months before them in which to take action, and long before that the coal monopoly might be broken up. He would move that the communication be entered on the minutes and acknowledged.

Professor MARKS said it was difficult to make out whether the company really intended to raise the price of gas or not. If, however, the vestry did nothing till the last moment, they would have no other resource than to pay what was asked, whatever the amount might be. They ought not, therefore, to remain in utter ignorance of the intention of the company until the time came when they would not be able to help themselves. As early as March, at least, they should place themselves in communication with the company, and ask for a decision.

Mr. FOXALL thought it would be quite possible for them to get up a company for themselves. Gas, it was well known by all scientific men, could be made at a cost of 2s. 8d. or 2s. 9d. per 1000 cubic feet. The rise in the price of coal was put forward by the gas companies as an excuse for their action, but it must be remembered that they had raised the price of coke and tar water, so that if they paid 5s. a ton more for coal they got 4s. a ton back.

Mr. WILSON said there was undoubtedly an intention to raise the price of gas. He was a shareholder in the Imperial Gas Company himself, and he thought it would be monstrous to raise the price. He was getting 10 per cent. on his shares, and did not think any one ought to want more. The sooner the vestry ascertained the truth the better.

Mr. JENNINGS stated that the Crystal Palace Company were putting up an apparatus in order to consume what is called the air gas, and it was possible that its use might be extended. He was not certain the streets could be lighted with it, but the matter was worth inquiring into.

Professor MARKS moved that the vestry-clerk be authorized to acknowledge the receipt of the communication, expressing thanks for the courtesy shown by the early notice, and stating that the vestry will require to know on or before the 1st of February next the determination of the gas company.

Mr. WILSON seconded the motion.

Mr. EMERY said it was supposed that the public lamps consumed 4 feet of gas per hour, but he did not believe they consumed anything like the quantity, for many of them gave no better light than a penny candle. He would ask the surveyor whether any means were in use for testing the quality.

The SURVEYOR said the medical officer had to determine the quantity of gas consumed by the lamps, and had a meter in his office which was attached to one of the street lamps for the purpose.

Mr. TYLER thought the attention of the gas company should be called to the fact that numbers of the public lamps were continually out. He did not think the public should pay for these lamps.

The CHAIRMAN said the gas company had already been communicated with on the subject, and had done, and were willing to do, anything they could to remedy defects.

Mr. HUGGARD said there were many lights out in his neighbourhood, and a police sergeant to whom he spoke about the matter said that deductions were made from the money paid the company for all the lamps which were out. He (Mr. Huggard) wished to know whether this statement was correct.

Mr. GREENWELL said the police sergeant was right to this extent: deductions were made for all lamps which were not lighted by the company, but deductions were not made when the gas was lighted and then got blown out afterwards.

Mr. BOARD asked whether it would not be possible to obtain the police reports as to the lamps which were out at night time.

Mr. GREENWELL said the officers of the vestry could see the police reports on application at the police station.

The motion proposed by Professor Marks was then put and carried.

Referring to the above discussion, the secretary of the Imperial Company has addressed the following letter to *The Times*:—

Imperial Gaslight and Coke Company, 33, John Street, Bedford Row, W.C., Jan. 4.

Sir,—From the report in *The Times* of to-day as to the proceedings at the Marylebone Vestry in regard to the notice of the termination of their contract for the supply of gas from this company, and the possible rise in the price when the notice terminates, it appears that the vestry have misunderstood the purport of the notice given to them.

The question raised by that notice is, whether the parishes shall continue to be charged for gas supplied to the public lamps at the rate of 6d. per 1000 feet less than the price paid by the private consumer, and that any future reduction of price should be equal to both parties.

The Imperial Company's practice in this respect is unfortunately exceptional. In all the other districts of the metropolis the charge for gas to the public and private consumer is the same, and the present impression of the directors of this company is that the latter procedure is the more correct; but it is really a question in which the public are much more interested than the directors, inasmuch as the higher the price the company receive for the supply to the street lamps, the sooner will the charge to the private consumer be reduced.

It is difficult to understand how the misunderstanding has arisen in the vestry, as my letter to them, a copy of which I enclose, appears to be explicit.—I am, sir, yours obediently, HARRY CHUBB, Secretary.

HACKNEY.

At the meeting of the Hackney District Board of Works, on the 30th ult., a similar notice from the Imperial Company to terminate the public lighting contract was read, and referred to a committee for consideration and report.

ST. GEORGE'S, HANOVER SQUARE, VESTRY.

At the meeting of this Vestry on the 2nd instant—Mr. JAMES in the chair,

Mr. WALKER moved—"That a committee of vestry be appointed to inquire and report as to the desirability of only one quality of gas being supplied to the public lamps in Belgravia, and as to what means can be adopted to improve the lighting of the streets; and further, whether any system of nightly inspection of the lamps was desirable." He said every individual in the room was dissatisfied with the supply of gas. He had made pilgrimages all over the metropolis, and of all the parishes in London he thought St. George's the worst lit. He had been informed upon good authority that cannel gas was not fit for lighting the streets, as the flame was too weak to bear the wind, and he mentioned one night when out of 860 lamps lit by cannel gas, more than 130 were extinguished.

Mr. FLEMING seconded the motion.

Mr. FINCH suggested that the motion should be made to extend to the whole parish, and said that anything more disgraceful than the lighting of Grosvenor Square he had never seen.

The CHAIRMAN had no doubt but that Mr. Walker would agree with the suggestion made by Mr. Finch.

Mr. WALKER altered his motion accordingly.

Colonel KNOX said the lighting of London was worse than that of any other city in Europe, and they might depend upon it that unless some strong action was taken against the gas companies they would never be able to obtain a remedy.

General Sir WILLIAM CODRINGTON said there was no doubt that the parish was badly lighted, and therefore he was in favour of the motion.

Mr. LESLIE alluded to what had taken place with regard to the Chartered Gas Company two years and a half ago. He said he brought before the vestry a statement from the accounts of that company clearly showing that there was no such thing as cannel gas. It was not to be had in London. The value of the gas—he meant its illuminating power—depended upon the relative proportion of carbon and hydrogen, and such was the construction of the London burners that cannel gas could not be supplied. They had got the Chartered Gas Company into the Queen's Bench, and that court had decided in favour of the vestry. The company had now gone into the Exchequer Chamber, where six or seven judges would sit to decide whether three judges in the court below were right or wrong. The first judges in the land were with the vestry, and he did not think it at all likely that the Court of Exchequer Chamber would overrule the judgment already given. If the case went against the Chartered Gas Company they would have to go to Parliament. In his opinion they should wait until the decision had been given.

The motion was then put, and agreed to.

METROPOLITAN BOARD OF WORKS.

At the Meeting of the Board on Friday, Jan. 3—Colonel HOGG, M.P., in the chair,

A letter was received from the London Gaslight Company, stating that owing to the increased cost of coal, &c., the price for gas supplied to the board's public lamps will be from the 25th of March next at the rate of 3s. 9d. per 1000 cubic feet.

Dr. LETHEBY, chief gas examiner, reported with reference to the low illuminating power of the gas supplied by the Imperial Gas Company on the 4th of December at Fulham, and the 2nd and 9th of December at Haggerston, that the deficiency of illuminating power was caused by the difficulties of manufacturing gas during the period of the stokers strike. The letter was referred to the Works Committee.

At the meeting of the board on Friday, Jan. 10,

A communication was read from the guardians of the parish of Kensington, protesting against the threatened increase in the price of gas in the district formerly supplied by the Western Gaslight Company. Another letter was received from Mr. H. F. Gibbons, transmitting copy of a resolution passed at a meeting of ratepayers of Kensington to the same effect. The communications set forth that whereas other parishes were only charged at the rate of 2s. 9d. per 1000 for the gas supplied to the public lamps, the Great Western Company, for gas manufactured from cannel coal, required 5s. 3d. The board was asked to interfere in order to protect the ratepayers against what were deemed extravagant charges.

Mr. RUNTZ moved, and Mr. ELT seconded, that the Local Board of Kensington be informed that this board have no jurisdiction in the matter.

Mr. ROCHE considered that the matter should be referred to the Works Committee, and moved an amendment accordingly.

Mr. E. D. ROGERS seconded the amendment.

Mr. NEWTON said it was the intention of the gas companies to introduce bills in the ensuing session to augment their powers. He believed there was a proposal to equalize the price of gas throughout the metropolis. He supported the amendment.

Mr. WATKINS approved of this matter being sent to the Works Committee, with a view to ascertain whether they had any power to prevent the gas companies from raising the price of gas so largely.

Mr. THOMPSON thought it behoved the board to consider whether they could not call for parliamentary interference, in order to confine within reasonable limits the cost of gas supplied for public lamps as well as to private consumers.

After some further discussion the amendment was carried by a large majority.

PADDINGTON VESTRY.

At the Meeting of this Vestry, on the 7th inst., Mr. Churchwarden GREATOREX in the chair,

Mr. DETHRIDGE, the clerk, read circular letters from the Imperial and Chartered Gas Companies, giving notice of intention to terminate their respective contracts for the supply of gas to the public lamps of the parish on the 30th of June next.

Mr. Churchwarden BRAID moved—"That this vestry do co-operate with the Gas and Water Committee of the vestry to urge upon the Board of Trade the necessity of sanctioning an arrangement with the gas companies to supply gas by meterage, one meter to be placed in every ten or twelve lamps."

Mr. MILLER seconded the motion, and in doing so said it would be as well if a deputation waited upon the Board of Trade.

Mr. TURNER hoped that ultimately they would be able to dispense with the gas companies altogether. He alluded to the new system lately introduced into London of lighting by oil. He trusted that the Gas and Water Committee would inquire into the matter.

Mr. HALL did not wish to go back to the old system of "Old Charleys" and oil and lamps, the evils of which were well known. He hoped Mr. Turner's object was not to blow them up with paraffin. He moved that a letter be sent to the gas companies asking a reply by the 1st proximo, stating the terms they intended to charge in the next contract.

Col. WALKER was of opinion that the Gas and Water Committee should inquire into the working of Silber's new process of oil lighting. He denied having any interest in the question, only so far as his connexion with the Society of Arts was concerned. Mr. Hall's amendment was then withdrawn, and Mr. Buckley moved it be referred to the committee to report to the vestry at their next meeting.

Mr. H. H. COLLINS said the question required a special knowledge possessed by few members of the vestry.

Mr. BRAID in reply pointed out, as a necessity for inquiring thoroughly into the matter, that at Uxbridge, where gas was 5s. per 1000 cubic feet, the price per lamp was only £2 17s., while in Paddington, where gas was but 3s. 8d. per 1000 feet, each lamp cost £4 8s. per annum. The amendment, with the exception of words "this day fortnight," was then put and agreed to, thus giving the committee more time; but upon being put as a substantive motion,

Mr. TURNER moved the addition of words "and also as to whether any substitute for gas can be introduced for use in the public lamps of this parish."—After some discussion the addition was negatived.

ST. PANCRAS VESTRY.

At the Meeting of this Vestry, on Wednesday, the 8th inst.—the Rev. A. W. THOROLD, M.A., vicar of the parish, in the chair.

Dr. STEVENSON, the gas examiner for the parish, made the following report:—"The gas supplied during December, 1872, by the Imperial Company, had an average illuminating power of 14·4 standard sperm candles, the maximum observed being 14·9, and the minimum 13·2 candles. The illuminating power was lower than that observed by me in the preceding month, but was almost identical with that observed during October last. Of impurities, sulphur was present to the amount of 22 grains per 100 cubic feet. Sulphuretted hydrogen was never detected. Ammonia was, as usual, always present in small quantities. Beyond a temporary diminution in the pressure of the gas supplied, no change in the gas supply could be detected in consequence of the strike among gas stokers. Very great waste of gas occurs among private consumers owing to carelessness as to the manner in which gas is burnt. Lamentable ignorance appears to prevail as to the necessity of keeping a gas-burner clean and free from rust. A dirty or rusty gas-burner can as little be expected to furnish a good light, even with excellent gas, as an ill-trimmed oil lamp."

The letter received from the Imperial Company giving notice to terminate the public lighting contract was referred to a committee.

A FOREMAN STOKER IN TROUBLE.—At the Bury Petty Sessions, on the 28th ult., Robert Fox was summoned for unlawfully absenting himself from the service of the Improvement Commissioners, who claimed £1 10s. damage. It appeared that defendant had worked at the gas-works, Elton, as foreman stoker, and on the 22nd of November he absented himself without notice. He was ordered to pay the damages and costs.

THE LONDON GAS STOKERS STRIKE.

A meeting of delegates, representing the metropolitan trade societies, was held at the Sussex Hotel, Bouverie Street, on the 31st ult.—Mr. G. Odger in the chair—for the purpose of "considering the critical legal position of all trades' societies and their officers, consequent upon the recent convictions of the London gas stokers at the Central Criminal and police courts, and the steps necessary to be taken thereon." The chairman having opened the proceedings by stating the object of the meeting, it was resolved—"That this meeting, composed of delegates from the various trade societies of London, expresses its astonishment and indignation at the unjust, cruel, and unprecedented sentence passed on the gas stokers by Judge Brett, at the Central Criminal Court, and feel convinced that if the employers of labour had been placed before him instead of workmen, no such vitiation of the law would have been attempted." [Also—"That this delegate meeting empowers the London Trades Council to convene, at the earliest possible date, an aggregate meeting of the London trades, for the purpose of protesting against the sentences passed on the gas stokers; to request the Government to effect the immediate release of the imprisoned men and to take such steps as may be found necessary in the interest of trades unions during the present crisis." "That this meeting empowers the London Trades Council to appeal at once to the public and to all trade societies for pecuniary aid on behalf of the convicted gas stokers."

On the 2nd inst., a meeting was held at the Working Men's Club, King's Road, Chelsea, "for the purpose of protesting against the sentence passed upon the men tried for conspiracy at the Central Criminal Court," at which the language used by the speakers was strongly denunciatory of the ruling and sentence of the learned judge, and one or two of them declared, amidst applause, that a refusal on the part of the Home Secretary to grant a remission of punishment might possibly lead to the adoption of violent measures, with the view of securing that end. One sapient speaker declared that the men now in prison were "the victims of a monopoly alike injurious to the general public and the stokers;" and another, in moving a resolution, said they did not wish for violence, but still they believed in an old adage which said, "Peaceable if you will, but forcible if we must." He was confident that if energetic action were taken, Mr. Bruce and the Government of which he was a member would not jeopardize their existence by refusing to do justice to the imprisoned men. It was resolved—"That, in the opinion of this meeting, the recent conviction of the gas stokers by Mr. Justice Brett on a charge of conspiracy manifests a vindictiveness almost unparalleled amongst the administrators of the law in modern times, and that the conspiracy laws, from their invidious nature, are a standing disgrace to our modern civilization."

At a meeting of the London Trades Council, held at the Bell Inn, Old Bailey, on the 3rd inst., it was resolved, after some discussion, that an appeal embodying the resolutions of the delegates, and asking for co-operation and pecuniary support, should be at once issued by the council, and 3000 subscription sheets be circulated with it through the societies and workshops; also that the London Trades Council convene an aggregate meeting of the London trades societies, to be held in Exeter Hall on Thursday evening, the 9th inst., to consider the case of the imprisoned gas stokers.

On the 4th inst., a meeting of the committee "acting in aid of the imprisoned gas stokers and their families" was held at No. 10, Bolt Court, Fleet Street, at which it was stated that since the meeting on the previous Saturday the Home Secretary had been furnished, in accordance with his request, with the specific points it was desired to lay before him by deputation, but that no reply had yet been received from Mr. Bruce as to the day on which he would receive the deputation. A second letter had been sent to the Home Office, asking Mr. Bruce to receive the deputation before the 11th inst., as on that day several of its members had to leave London to attend the Trades Congress at Leeds. Mr. Broadhurst, the secretary, read a letter from Mr. W. Cobbett, stating that in the case of Dixon, the gas stoker committed by Mr. Paget, the magistrate, from the Thames Police Court, to six weeks imprisonment, he had made application at chambers to Mr. Justice Quain for a *habeas corpus* on the ground of a wrongful committal, but that the application had been refused for want of evidence. A letter was also read from Mr. Reginald Hughes, barrister, Lincoln's Inn, asking the committee to institute a national agitation for the amendment of the law, and offering his gratuitous services to the committee. It was stated that the families of the five men convicted of conspiracy were receiving a weekly allowance from the committee.

A meeting of the delegates from the Carpenters and Joiners Society was held the same day at the Brown Bear, Bloomsbury, at which it was resolved—"That we approve the action taken by the trades in sending a memorial to the Home Secretary asking for a remission of the sentences passed upon the gas stokers at the Old Bailey by Mr. Justice Brett; that, should the answer to that memorial be unsatisfactory, we pledge ourselves to do all in our power legitimately to obtain the release of the men from prison."

On Monday, Jan. 6, it was announced at the meeting of the Bolt Court Committee that the following letter had been received from the Home Office:—

Whitehall, Jan. 4, 1873.

Sir,—I am directed by Mr. Secretary Bruce to acknowledge the receipt of your letter of the 28th ult., requesting him to receive a deputation on behalf of the imprisoned gas stokers.

In reply I am to acquaint you, with regard to the question of a mitigation of the sentence passed upon the gas stokers by Mr. Justice Brett, that it is Mr. Bruce's invariable practice to decline to receive deputations for the purpose of inducing him to alter sentences imposed in due course of law.

If, however, a memorial setting forth grounds for mitigating the sentence of the gas stokers were sent to Mr. Bruce, it would receive his most careful consideration.

Mr. Bruce must also decline to receive a deputation for the purpose of having his attention called to the following questions:—

"1. Is it the opinion of the Government that Mr. Justice Brett's summing up, as reported in *The Times*, is a correct exposition of the common law of conspiracy?

"2. What was the intention of the Government in inserting a clause and provisoes respecting conspiracy contained in the Trades Union Act and the Criminal Law Amendment Act?"

The Secretary of State is not a court of appeal from the decisions of Her Majesty's judges on questions of law, and has no authority to overrule them.

The Court for the consideration of Crown Cases Reserved is the proper tribunal to decide such questions; and if the correctness of the law laid down by the judge at the trial had been doubted, it was open to the counsel engaged to have asked to have a case reserved for the opinion of that court; but such a course was not adopted by them.

The Secretary of State, therefore, must decline to have any such question raised before him, or to give any opinion upon it.

Mr. Bruce must also decline to receive a deputation for the purpose of discussing the intention of the Government in having passed an Act, or part of an Act of Parliament. The Government is responsible to Parliament; and Parliament having sanctioned the Act in question, it is in Parliament alone that Mr. Bruce would be prepared to answer any questions as to the ground upon which the Government considered it advisable that any part of such Act should be retained or repealed.—I am, your obedient servant,

"A. F. O. Liddell."

A memorial drawing the attention of the Home Secretary to the following points was then adopted:—

First, that the condemned men were poor and untaught, and had not, until the last moment, the means to enable them to answer the several charges in the long indictment preferred against them; that the application for the postponement of the trial on these and other grounds was refused by the judge, one day's delay only being allowed; that the trial and sentence upon these five poor men took place under feelings of popular excitement and prejudice, likely to cause a miscarriage of judgment or such severity of punishment as appears to have the character of vindictiveness; that even if the law as laid down by the judge is sound, and the charges as preferred against these men are proven, yet the sentence is excessive, and altogether disproportionate to the offence with which they were charged. Secondly, these men, and others of Her Majesty's subjects, are under the impression that the law under which they are governed and are to be tried with reference to these special offences are (1) the Masters and Servants Act, 1867 (30 and 31 Vic., cap. 141), relating to the laws of contract between masters and workmen; and (2), with reference to the laws of combination, that the Criminal Law Amendment Act, 1871 (34 and 35 Vic., cap. 32), was the special law affecting these offences, and that all other laws against combinations of workmen were and are repealed by clause 7 and the schedule of the latter Act. The punishment to be awarded under the above-mentioned Act in the most extreme case for aggravated misconduct is limited to three months imprisonment; and for that punishment there must be "injury inflicted on the person or property of the party complaining, or the misconduct, misdemeanour, or ill-treatment complained of, has been of one aggravated character." The Act further provides "that such injury, misconduct, misdemeanour, or ill-treatment has not arisen or been committed in the *bonâ fide* exercise of a legal right existing, or *bonâ fide* and reasonably supposed to exist." Practically, the offence charged against these men was not to the effect of injury inflicted on "the person or property of the party complaining," namely—the gas company, but of quite other persons, namely, the public, who were not the prosecutors in the case at all. These men are, therefore, summoned by one party, and for one offence, and are punished for another. Moreover, the parties injured, or supposed to be injured, within the meaning of the Act were not the prosecutors, and therefore the 14th clause of the Act does not apply. It is further to be borne in mind that the men were no parties to the contract with the public, and therefore cannot be punished for the breach of a contract that never existed. Thirdly, if the men erred, they did so through ignorance of the law, and under the impression that the law of contract is mutual; that the right of leaving without notice is co-existent with, and consequent upon, the right of discharge without notice. The right of discharge was often and generally exercised without such notice; in the case of Dilley it was so exercised, and, therefore, the men thought that the law was equal as between both parties to a contract. The instrument of contract, as signed by the men, was not equitable, and therefore not good in law. The men, moreover, committed the breach of contract, such as it was, in what they conceived to be "the *bonâ fide* exercise of a legal right existing or *bonâ fide* and reasonably supposed to exist," as provided under the 14th section of the Masters and Servants Act, and therefore the case of aggravated misconduct does not apply. It was distinctly stated at the time of the commitment, and also at the trial at the Central Criminal Court, that no act of coercion or intimidation beyond leaving work was done, either to the party complaining or to those in their employment. This, therefore, is a new offence, and as such punished under an *ex post facto* law—judge made under the pressure of popular excitement to suit a special case which is not a suitable offence, and in which the judge himself stated that he had to find the law. If the law as laid down by Mr. Justice Brett is good, no man is safe; and this startling judgment is practically given, that it is a greater crime to conspire to commit an offence than to do it, and, therefore, to be punished with greater severity. That this is so is evident from the fact that the greatest punishment under the two Acts under which these offences are supposed to have been committed are three months in either case, or a total of six months in all. This being a new phase of law to working men, and as the offences were committed in total ignorance thereof, the undersigned plead for the mitigation of the excessive vigour of the punishment inflicted on these poor men. We humbly submit that if Mr. Justice Brett's decision is to hold good, the clauses above quoted have misled the working men into a false sense of the law, and they must regard the whole of the questions, which were supposed to be set at rest by the recent legislation of the present Government, as re-opened and unsettled.

At the meeting of the Commissioners of Sewers for the City of London on the 7th inst., Mr. Daw, chief clerk, read a letter from the Chartered Gas Company, expressing grateful thanks to the commission for their generous support in lending them the services of the street scavengers during the late strike. The communication was ordered to be entered on the minutes.

At the monthly meeting of the Birmingham Trades Council on the 1st inst., the chairman originated a discussion upon the question of the imprisonment of the London gas stokers, and a resolution was adopted, appointing a sub-committee to convene a meeting of the trades unionists in the town-hall, to protest against the unjust convictions of the London gas stokers, and to consider the best means of rendering prompt and efficient support to the families of the prisoners, and also that the committee prepare a programme for such meeting.

A public meeting convened by the London Trades Union was held at Exeter Hall on Thursday last "to protest against the persecution of the gas stokers, and to consider the present legal position of trade societies." The chair was occupied by Mr. Allan, of the "Amalgamated Engineers," and addresses of the usual character having been delivered, a collection was made, not for the stokers or their families, but to defray the expense attending the hire of the hall in which to air the opinions of these trades unionists. At the same time "a pledge" was given to raise funds for the "persecuted men" from other persons.

At the Thames Police Court on Saturday last, John Harris, formerly in the service of The Gaslight and Coke Company, Bow Common, was charged on a warrant with violently assaulting George Belchambers, a gas stoker employed on the same works. Mr. Besley conducted the prosecution for the gas company. The complainant said that on the afternoon of the 2nd of December he went to a public house in Bow Common Lane, and entered the taproom. The defendant came in shortly afterwards, and called him a turncoat. He asked what for. Harris said, "For working against your own mates, and not paying the society's money up." The complainant said he did not intend to pay the money up, when Harris struck him a violent blow on the right eye with his clenched fist. In the struggle he was again struck by him in the face. The landlady turned the prisoner out, but he subsequently re-entered the room, and struck the complainant a blow in the face and knocked him down. The defendant was then put out of the house The complainant added that the second finger of his right hand was permanently disabled. He bled profusely from the head, and believed that the defendant meant to place him on the fire. In cross-examination the complainant said he did not give any provocation. Corroborative evidence was adduced. Mr. Paget sentenced the defendant to two months imprisonment, with hard labour.—William Muskey, a bootmaker, was also charged with a violent assault upon George Crutchfield, a plumber. The complainant stated that he was employed as a plumber at the Imperial Gas-Works at Bromley. Owing to the strike his services were dispensed with, and he left. A few days afterwards he went to a public-house, where several men, one of whom was the defendant, argued about the strike and their rate of wages. He tried to correct them; high words ensued, and he quitted the house. On the same evening, at a public-house in the Mile-End Road, he again saw the defendant and several others. The defendant made use of foul language, and said to his companions, "Here comes that big fellow that knows so much about the gas affair." Thinking that they wanted to pick a quarrel, he left the house, but had not proceeded more than 100 yards before the defendant came up to him, used bad language, said, "Here is the fellow that knows so much about it," and struck him a violent blow in the mouth, knocking him down. While he was on the ground the defendant kicked him about the head and body until he became insensible. When he regained his senses he found himself bleeding. He also missed 2s. from his pocket. He went to the hospital, where he remained for 31 days. The defendant denied that he had kicked him. Mr. Paget adjourned the case for a week to see if the complainant and the defendant could come to some arrangement. He told the prisoner that if, after his witnesses had been called, and it was proved that he had assaulted the complainant in the manner he described, he might be sent to trial.

At Birmingham, on Saturday evening, a meeting of trades unionists was held in the town-hall, "to protest" against the sentence passed upon the gas stokers. A strong resolution was, of course, passed on the subject, the punishment of the stokers being regarded by the speakers and by the meeting as a direct attack on unionism.

The Gas Stokers Union, the active cause of all the recent mischief, seems to have disappeared; at all events, its members have not been heard of since the strike became a failure.

DR. EVELEIGH'S PATENT SYSTEM OF MANUFACTURING GAS.

REPORT OF EXPERIMENTS BY F. W. KEATES, ESQ., F.C.S., AND PROFESSOR W. ODLING, F.R.S.

[N.B.—The following report is given verbatim, except in respect of the numbering of the paragraphs, italics, and foot notes, which are not in the original, but have been added by the company's engineer for facilitating reference and elucidating the subject matter.]

To the Directors of the Patent Gas Company, Limited.

Gentlemen,—We have the honour to hand you herewith our report upon the results of the experiments at Barnet and Peckham, undertaken at your desire, upon Dr. Eveleigh's Patent Gas Process.

1. We paid our first visit to Barnet on the 26th of March. The apparatus which was placed at our disposal for the purpose of carrying on the proposed experiments consisted of four benches of D retorts, each bench containing five retorts, set in the usual manner; two oil gas generators, for the conversion of the coal oil into gas; three gasholders, one large, capable of containing about 120,000 cubic feet of gas, the two others of comparatively small size; the usual purifying arrangements for the use of dry lime as a purifying material, with an additional purifier, containing crystals of sulphate of iron, intended for the removal of ammonia. The only difference between the retorts and common iron D retorts was that the eduction-pipe was placed in the posterior end or back of the retort instead of near the mouth, and that in the place of the ordinary hydraulic main a sort of continuous tank was placed at the back of the retorts, and into this the eduction-pipe, which was descending, dipped, and was sealed by the tar, or rather oil and ammoniacal liquor, produced during the carbonization of the coal. The retorts themselves were 8 feet in length and 2 feet in width on the floor. The eduction-pipes were 4 inches in diameter, commencing with an oval orifice in the retort 7 inches wide and 4 inches deep. The arrangements for condensation and exhaustion were precisely of the usual kind, and, as well as the purifiers, were the same that had been in use at the Barnet works before the new system was set in operation.

2. In addition to the gas-making appliances at the works, we found a complete photometric apparatus, with the means of estimating the sulphur and ammonia, fitted up in a house distant 1100 yards from the gas-works on the road to the town of Barnet; this apparatus was supplied with gas from the ordinary 2-inch main laid down in the road to supply gas to the public lamps and to the houses up to and beyond the testing-place.

3. It may be mentioned here that the gas obtained from the retorts and that from the oil gas generators could not be separately estimated as to quantity, nor examined for quality, at Barnet. These gases, as they left the retorts and generators, mingled before they reached the condensers, and were condensed, passed through the exhausters, purified, and stored together.

4. On the occasion of our visit, on the 26th of March, we made a thorough examination of all the appliances available in the proposed experiments; and it was finally decided to commence on the 10th of April, as some arrangements had to be made for continued supervision by day and night.

5. On the 10th of April we again went to Barnet, with the object of commencing the experiment, but upon consideration it was thought better to defer beginning until one p.m. on the 11th. At the first view it may appear that there was no ground for this delay, but it must be remembered that the Barnet works were at this time under contract to supply the gas which was distributed to the public, and that all arrangements for the commencement of our investigation had to be made subject to that state of things; and in arranging for the time of charging and discharging the retorts, and some other matters, we were obliged to keep this always in view, and this continued to be the case all through our experiment.

6. On the 10th of April there were three benches of retorts at work in the morning, but these were supplying gas somewhat faster than it was required; the days were also getting longer, and the consumption of gas diminishing in proportion; it was consequently decided to throw one bench out of work, and to make the experiment with two benches only.

7. The gas-making power, so far as coal was concerned, consisted then of two benches of retorts, containing, as we have stated before, ten retorts, each retort being 8 ft. long and 2 ft. wide. The charges of coal were to be 4 cwt. each for the two lower retorts, and 3 cwt. each for the three upper retorts, and the charges were to be worked off in twelve hours.

8. It was decided that one of the oil gas generators only should be used with the ten retorts.

9. On Thursday, April 11, we commenced the first experiment, the condition of the works at the time of starting being as follows:—

10. Two benches, containing ten retorts empty and ready for charging.

11. One oil generating apparatus, charged with fresh charcoal, and connected with a supply-tank, 8 ft. long, 4 ft. wide, 2 ft. 10 in. deep, containing 566·2 gallons of coal oil produced in the works.

12. Two small gasholders full of gas, and one large holder containing about 75,000 cubic feet of gas. Before commencing work the small holders were cut off* from the main, as it was determined that the gas which they contained should be kept untouched until the whole experiment was completed, with the object of testing the permanency of the gas as to lighting power; the whole of the gas made during the experiment could therefore only be passed into the large holder, and the public consumption was also to be derived exclusively from it.

13. Before beginning the experiment, the lighting power of the gas in stock in the three holders was taken, and found to be 24·73 candles.

14. The coal to be used in the experiment was Norfolk Silkstone.

15. At one p.m. the two lower retorts of both benches were charged with 4 cwt. of coal each, these retorts being at low or dull red heat, distinctly visible in daylight; the upper two were rather lower in temperature. The heating was tolerably even, the temperature indicated by Baily's pyrometer being 1320 Fahr.

16. Immediately after the retorts were charged, the oil was started running into the generator, the temperature of the charcoal retort being full red.

17. At the time of charging the retorts and starting the oil apparatus, the register of the station-meter stood at 116,776, which was the starting-point with reference to the make of gas during the experiment.

18. Instructions were given that the retorts in the second row should be charged at five p.m., and the upper single retort in each bench at nine p.m.; the lower row to be drawn and recharged at one a.m. on the 12th, and so on every four hours until the end of the experiment.

19. It may be remarked here that your engineer, Mr. Mellor, who was present when the experiment was commenced, thought the temperature of the retorts rather too low, and instructions were given to raise the heat slightly. This was accordingly done as the experiment progressed.

20. April 12.—The retorts had been regularly charged every successive four hours, and both retorts and oil apparatus had been working satisfactorily. The temperature of the retorts had been a little raised, as was arranged yesterday. At one p.m. the station-meter registered 139,750 in the 24 hours; therefore 22,974 cubic feet of gas from coal and oil had passed through the meter. The mean lighting power of the gas was 22·88 candles.

21. On this day daily during the continuance of the experiment, the lighting power was taken three times—morning, mid-day, and at 8.30 in the evening. The sulphur and ammonia were also estimated daily.

22. April 13.—The retorts had been and were working well; the oil apparatus also continued to work satisfactorily until 7.30 p.m., when the influx of oil had to be stopped in consequence of the pitch boiling over from the still into the charcoal retort; this seems to have arisen from the oil having been run into the apparatus rather too rapidly. Before it could be started again the cover at the top of the retort had to be removed and the charcoal stirred up. All this caused a delay of more than an hour; by nine o'clock, however, the apparatus was at work and gas passing freely as at first.

23. April 14.—The retorts continue to work very well, but the oil apparatus stopped at 4.30 p.m.; stirring up the charcoal, however, removed the obstruction, and the oil was run into the apparatus again after a short delay.

24. April 15.—The oil apparatus was obliged to be stopped at nine a.m., although it had been working very well during the night; the cap had now to be taken off the short eduction-pipe and the small cover from the top of the charcoal retort, so as to allow a current of air to pass through the red-hot charcoal. In a short time the obstruction, which seemed to arise from an accumulation of pitchy cinder in the upper part of the charcoal retort, was burned out, and the apparatus was again started. At 8.30 p.m. another stoppage occurred, but by similar treatment was remedied, so that the apparatus was at work again at ten p.m. The retorts continued to work satisfactorily as before.

25. On each day during the experiment the station-meter was taken at nine a.m., one p.m., and nine p.m.; but the record of this, with other matter, will be found more conveniently in the following tables.

26. April 16.—The oil apparatus had to be stopped again at eight a.m.; it had to be opened as before, and after about an hour and a half of delay was set to work again. It stopped, however, in the evening about nine, but was got to work by ten p.m. The retorts continued to work very well, although the yield of gas is below what we were instructed to expect; but the lighting power, as will be seen in the table, *is very good*.

27. April 17.—This is the last day of the experiment, the one a.m. charge of coal in the retorts being the last. At 11.15 a.m. the running of the oil into the oil apparatus was stopped, the object of this being to give time for the refilling of the oil-tank, so that a second experiment might be commenced without delay, so soon as the charges of coke were out of the retorts in the middle of the day.

28. Shortly before one p.m. the retorts were drawn, and the first experiment brought to a termination; at that time the station-meter registered 286,420, the difference between that number and 116,776, the state of the register at starting on the 11th, representing the total number of cubic feet of gas obtained from coal and oil during the six days experiment. In these six days 19 tons 10 cwt of coal had been carbonized, and 416·5 gallons of oil had been run into the oil apparatus, at as even a rate as possible.

29. According to the above figures, the oil would be in the proportion of 21·3 gallons to the ton of coal, and the whole yield of gas during the experiment was 169,644 cubic feet, or at the rate of 8700 cubic feet of gas to the ton of coal. *plus* 21·3 gallons of oil;* the mean lighting power of such gas being equal to that of 22·73 candles, and the mean quantity of sulphur impurity being 6·0, grains in the 100 cubic feet of gas.

30. At the termination of the experiment, the eduction-pipes of the retorts were all opened so that they could be examined through their whole length. This had not been done since the commencement of working on the 11th. All the pipes were found to be clear; a very little cindery matter had collected in the horizontal part of the pipes near the retort, *but there was no choking of the pipes whatever*.

31. The eduction-pipe of the oil retort, or convertor, was also opened at this time; it was quite free from any carbonaceous deposit throughout its whole length, which is nine feet, the diameter being four inches. This pipe had not been opened since the 11th. The working of the oil apparatus had had to be stopped six times during the experiment; *it was, however, always found easy to clear it and make a fresh start without much delay*.

32. It was intended by this first experiment to test the general working of Dr. Eveleigh's system only *quoad* gas making; no account was therefore kept of the quantity of coke produced, nor of that consumed under the retorts and still. The quantity of coke from one ton of coal was, however, carefully weighed after it had become quite air dry from the quenching; it amounted to 14½ cwt., and measured exactly one chaldron.

33. The specific gravity of the Silkstone coal used in the experiment was 1·270; one cubic foot weighed, therefore, 79·37 lbs., the ton by weight measuring 28·2 cubic feet. It contained 2·59 per cent. of sulphur.

34. The whole of the results of this experiment are presented below in the tabulated form.

Date.	Daily Register of Station Meter.			Gas produced in 24 hours ending 9 p.m.	Rate of Yield of Gas to the ton of Coal, 21·3 gals. of Oil.	Daily mean Lighting Power of the Gas.	Sulphur in 100 Cubic Feet of Gas.	Ammonia in 100 Cubic Feet of Gas.
April.	9 a.m.	1 p.m.	9 p.m.					
11	..	116,766	121,140	..	..	24·73		
							7·19	2·13
12	134,220	139,750	149,630	28,490	8379	22·88		
							6·73	2·53
13	164,370	169,680	180,470	30,840	9070	24·23		
							4·40	2·03
14	194,680	199,330	210,000	29,530	8685	22·88		
							5·23	2·39
15	225,900	230,800	241,700	31,700	9323	21·82		
							6·35	2·26
16	257,160	262,500	273,400	31,700	9323	22·08		
							6·20	2·53
17	285,630	..	..	..	..	20·73		

35. On the 17th, immediately upon the completion of the experiment described a second experiment was commenced upon the same kind of coal, the only difference in the conditions of the experiment being—

1. That the temperature of the retorts should be slightly raised.
2. That both the oil retorts should be used, as it was thought that the proportion of oil to coal in the first experiment was too small.
3. That the pitch from the still of the oil apparatus should be run off twice a day instead of once, as in the first experiment, as it was thought that the accumulation of liquid pitch had something to do with the occasional obstruction of the oil apparatus which occurred in the first experiment.
4. That all the coke produced should be weighed.
5. That all the coke used under the retorts and oil apparatus respectively should likewise be weighed.

36. † The first charge of coal was placed in the retorts at one p.m., the time and succession of charging being the same as before. At this time the station-meter registered 286,426, this being again the starting-point for the quantity of gas produced in the experiment. The oil-tank was also full of oil. At the commencement of this experiment it was estimated that there were about 65,000 cubic feet of gas in the large holder.

37. The oil apparatus which was first started in this experiment was not that used in the last, but the one known as No. 2, that previously used being No. 1. As after the completion of the first experiment the oil-tank had to be filled, some little delay took place in setting the oil-retort to work; this was, however, done at five p.m.; when the oil first began to flow into it. The charcoal in No. 1 oil-retort had also to be changed; it appears to be necessary that this should be done

* By filling the syphons of the inlets and outlets.

* Exclusive of the oil produced from the coal.

† The oils used were not fresh, but the accumulation of several weeks previous distillation, including the oil passed over from the second process.

every eight or ten days, and as it took some time, the retort was not set to work until the next day.

38. April 18.—The retorts were a little hotter than before Baily's pyrometer indicating about 1400 Fahr.; they were working quite satisfactorily. The No. 2 oil-retort was also going on very well, the temperature of the charcoal vessel being about 1000 or 1050 Fahr. that of the upper part of the oil-still about 630 Fahr.

39. The No. 1 oil apparatus, with a fresh charge of charcoal, was started working at nine p.m.

40. At one p.m. the station-meter registered 311,700; consequently in the 24 hours there had been 25,274 cubic feet of gas through the meter. The lighting power of the gas at 4.30 p.m. was 21.7 candles.

41. April 19.—Retorts and oil apparatus were all working well. No stoppage of any kind.

42. April 20.—At six a.m. the oil-retorts had to be stopped, as the oil in the tank was exhausted; 533·4 gallons of oil had been run through the apparatus since five p.m. on the 17th; this was at the rate of about 8·7 gallons per hour. The tank was pumped full again, and the oil-retorts set to work at eight a.m.; they had, however, to be again stopped for a short time, in consequence of some thick oil from the bottom of the tank having got into the feed-pipe. This was soon cleared, and the apparatus was well at work at nine a.m. The retorts were working regularly and well.

43. April 21.—The No. 1 oil apparatus became obstructed, and had to be treated as described in connexion with the first experiment. The cap was also taken off the short eduction-pipe which leads from the charcoal retort in No. 2, *but it was found to be quite clear.* It may be remarked here that the stoppage of the oil apparatus had never in these experiments occurred from the choking of the pipes, but always from the charcoal in the retort, principally in the upper part becoming clogged with a deposit of pitchy cinder.

44. April 22.—The retorts were working well, so also was the No. 2 oil-retort; the No. 1 came, however, to a stop at 3.30 p.m., but was soon cleared and set off working again. At four p.m. the lighting power of the gas was 20·45 candles, which was rather below what had been obtained heretofore; but this is to be accounted for by the increased heat of the retorts, and was in relation to the consequently larger yield of gas.

45. April 23.—The oil-retorts worked well up to 5.30 p.m., when the No. 1 apparatus had to be stopped as before; it was, however, opened and treated in the usual way by stirring up the charcoal and letting the air through the apparatus, and was soon got to work again.

46. April 24.—The second experiment was brought to an end this day at one p.m. At that time the station-meter registered 495,463; on the 17th, at the time of starting, the register of the meter was 286,426; the difference between these numbers, 209,037, being the quantity of gas which had been produced by the coal and oil carbonized between one p.m. on the 17th and one p.m. on the 24th. The quantity of coal carbonized in that time was 22 tons 2 cwt., and as the second tank filled on the 20th was exhausted at the end of the experiment, the whole quantity of oil was 866·9 gallons.

47. From 22 tons 2 cwt. of coal and 866·9 gallons of oil, or 39·2 gallons per ton of coal, 209,037 cubic feet of gas had been produced; this is at the rate of 9460 cubic feet of gas from the ton of coals *plus* 39·2 gallons of oil.* Assuming the weight of the oil to be 10 lbs. per gallon, the gross weight of the 39·2 gallons would be 392 lbs., which, added to 2240 lbs. for the ton of coal, would give 2632 lbs. as the weight of coal and oil used in producing 9460 cubic feet of gas. Taking the gas-yielding power of the oil to be equal to that of the coal, these figures would show a yield per ton of 8051 cubic feet. In the first experiment the yield was even lower than this. In that case 2240 lbs. of coal and 213 lbs. of oil produced 8700 cubic feet of gas, which is at the rate of less than 8000 cubic feet per ton.†

48. The quantity of coke produced by the 22 tons 2 cwt. of coal was 17 tons 6 cwt., being at the rate of 15½ cwt. per ton of coal. This is a higher yield than that from a single ton of coal in the first experiment, but the difference is accounted for by the circumstance that in the case of the smaller quantity, the coke was thoroughly dried in the sun and wind, while in the last experiment the coke was taken in the state in which it would be ordinarily found in gas-works, and contained some moisture.

49. The quantity of coke used in carbonizing the 22 tons 2 cwt. of coal was 7 tons 4 cwt., or 6½ cwt. per ton of coal, or 32·5 per cent; the coke used in carbonizing the oil in the two oil-retorts was 1 ton 13½ cwt. for the gross quantity of the oil used—viz. 866·9 gallons; the proportion of coke for the quantity of oil used to the ton of coals, 39·2 gallons, being 1½ cwt., or about 43 per cent. If this be reduced to the proportionate yield of gas per ton of material, coal and oil, the quantity of coke used in eliminating 8051 cubic feet of gas was equal to rather more than 6¾ cwt.

50. The mean lighting power of the gas in this experiment was 21·11 candles—rather lower than in the former, as might have been expected, the heats having been somewhat raised, and consequently the yield of gas a little increased.

51 The mean amount of sulphur impurity was low, as before, being only 5·51 grains in the 100 cubic feet of gas. The coal was in all respects the same as in the first experiment.

52. When the last charges were drawn, and all the eduction-pipes were opened there was *no obstruction whatever;* a little cindery matter was found near the outlet from the retorts, and also in the short pipe leading from the charcoal retorts, but practically there was *no choking up of the pipes in any part of their course.*

53. ‡ It is remarkable that all the stoppages in the oil apparatus occurred in the No. 1 apparatus. No. 2 worked *without any check* from the 17th to the 24th. This shows that the fault lies in some way in the apparatus, and *that it is not inherent to the system.* The results of the experiment are tabulated below.

Date.	Daily Register of Station Meter.			Gas produced in 24 hours ending 9 p.m.	Rate of Yield of Gas to the ton of Coal and 39·2 gals. of Oil.	Daily mean Lighting Power of the Gas.	Sulphur in 100 Cubic Feet of Gas.	Ammonia in 100 Cubic Feet of Gas.	Coke burned under Retorts.	Coke burned under Oil Retorts.
April.	9 a.m.	1 p.m.	9 p.m.							
17	..	286,426	291,100	..	..	20·66			Cwt.	Cwt.
18	305,900	311,700	321,000	29,900	8,800	21·66	5·93	2·90	20	5·5
19	336,630	342,430	352,850	31,850	9,353	21·65	4·26	2·80	24	7·0
20	369,000	376,370	386,400	33,550	10,455	21·62	..	1·97	24	4·0
21	402,500	408,500	418,300	31,900	9,382	21·79	..	2·08	25	6·0
22	434,330	441,200	452,200	33,900	9,970	20·30	..	2·50	25	8·0
23	468,200	475,100	486,400	34,200	10,500	20·85	5·30	2·40	26	3·0
24	495,463	..	...	..	..	20·38	6·56	3·80	..	..

* Exclusive of the oil produced from the coal as before.
† Coal and oil combined.
‡ This is extraordinary, for both the apparatus are precisely alike.

54. It has been stated that at the commencement of the experiment on the 11th the small holders were cut off from connexion with the inlet and outlet pipes, so that the gas which they contained might be kept unmixed until the end of the experiment, in order that the permanency of its lighting power might be tested. On the 24th, after the second experiment was completed, the No. 2 small holder was put into connexion with the photometer on the works, by a special pipe not communicating with any other pipe. This gas had been in the holder *thirteen days*; during that time it had been subjected to very considerable changes of temperature, the minimum temperature being on the night of the 20th as low as 26° Fahr. and the mean lowest temperature of eight nights being 37·8°.

55. At the time of storing the gas on the 11th the lighting power was taken and found to be 24·73 candles; when it was tested again on the 24th the lighting power was 21·50 candles, showing a loss of 3·23 candles, or 13 per cent., during the thirteen days.

Experiments at Peckham.

56. When the experiments described above were finished at Barnet, there remained several points upon which, owing to the particular arrangement of the works, it was impossible to obtain any information. The principal of these related to the character and proportion of the gases produced severally by the coal and oil, which there were no means of measuring at the Barnet works. In accordance with your instructions, therefore, it was understood that the investigation should be continued at your experimental works at Peckham. At the time of the completion of the Barnet experiment, however, the Peckham works were being fitted with new retort and oil apparatus. This caused a long delay, and it was the 19th of June before everything was ready to start.

57. The appliances placed at our disposal at Peckham consisted of one retort of the same dimensions as those at Barnet—viz., eight feet long and two feet wide; an oil apparatus also similar to those at Barnet;* a gasholder capable of containing about 2500 cublic feet of gas, with two purifiers of the usual kind, one being charged with lime, the other with sulphate of iron crystals, with the intention of absorbing ammonia. Connected with the works there was also a very good photometer-room, with all the necessary apparatus for testing the gas both as to light and impurity. It should also be stated here that the pipe through which the gas was conveyed from the holder to the photometer was 1000 *feet in length,*† exposed in every part. The object of this was to test the condensability of the gas; but this had been already tested more severely *at Barnet*, and, as will be seen, was afterwards tested likewise at Peckham.

58. There were four points for investigation at Peckham—

1. The quantity and quality of the gas produced by Dr. Eveleigh's system of working from coal alone.
2. The quantity and quality of gas from oil alone.
3. The quantity of oil produced from the coal. Neither of these three points could be decided at Barnet.
4. The quantity and quality of gas obtainable from a mixture of coal and oil, as at Barnet. We were requested to repeat the first of these trials upon three varieties of coal—viz., Norfolk Silkstone, Clay Cross, and Pelaw Main.

59. The first experiment was commenced on Wednesday, the 19th of June, at nine a.m., the retort being then charged with 4 cwt. of Silkstone coal.

60. The charges were to be made every twelve hours, and it was determined that eight charges, equalling in the gross 32 cwt. of coal, should be worked off in each experiment.

61. The retort at starting was at a dull red heat, Baily's pyrometer indicating a temperature of 1300°.

The station-meter registered 2720.

62. The quantity of coke produced, and also that consumed in the retort furnace, were to be carefully noted.

63. During the continuance of this experiment, there was little or nothing to record daily; the retort worked very well from the commencement, and on the whole very evenly.

64. On several occasions the hourly working of the retort for twelve hours was observed. The record of one day, the 20th of June, will suffice to illustrate this.

Time.	Register of Meter.	Current Hour.	Cubic Feet of Gas.
9 a.m.	6290	..	..
10 ,,	6460	1st	170
11 ,,	6680	2nd	220
12 noon	6860	3rd	180
1 p.m.	7030	4th	170
2 ,,	7170	5th	140
3 ,,	7360	6th	190
4 ,,	7530	7th	170
5 ,,	7680	8th	150
6 ,,	7830	9th	150
7 ,,	7950	10th	120
8 ,,	8050	11th	100
9 ,,	8100	12th	50

The whole yield of the twelve hours being 1810 cubic feet of gas from 4 cwt. of coal.

65. On the 23rd, at nine a.m., the experiment was brought to an end, the last charge in the retort being drawn at that time. The station-meter then registered 16,463, the difference between that and 2720, the starting-point on the 19th—viz., 13,743, shows the number of cubic feet of gas obtained from the 32 cwt. of coal; this is equal to nearly 8590 cubic feet per ton.

66. The total quantity of coke, weighed dry, was 22 cwt. 1 qr. 24 lbs., which was at the rate of 14 cwt. 0 qr. 4 lbs. to the ton of coal.

67. The quantity of oil from the 32 cwt. of coal was 26·25 gallons, as nearly as possible, for it was very difficult to collect it wholly or to separate it from the liquor which was mixed with it, as the specific gravity of the two was nearly the same. This yield of oil was at the rate of 16·4 gallons to the ton of coal.

68. The quantity of coke burned under the retort in carbonizing the 32 cwt. of coal was 20 cwt. 3 qrs. 10 lbs., or 13 cwt. 0 qr. 2 lbs. per ton of coal, which is 65 per cent. of its weight.

69. The mean lighting power of the gas obtained in this experiment was 23 candles. The mean sulphur impurity was 8·49 grains in 100 cubic feet of gas.

70. At the end of the experiment the eduction-pipe of the retort was opened, and found *quite free from any obstruction.*

71. On the 24th, at five p.m., a small gasholder on the works, not used in the gas-making experiment, having a capacity of about 100 cubic feet, was filled with gas from the larger holder and sealed up; this was for the purpose of repeating the test made at Barnet as to the permanency of the gas.

72. It may, perhaps, be as well to state at once here that this gas was kept untouched until the 17th of July, when its lighting power was tested. At the time of storing, the lighting power was 22·8 candles; after being kept twenty-three days, the lighting power was 17·1 candles. During the interval of the first and second testings of the gas, it had been exposed to considerable changes of temperature and several violent thunderstorms with rain. THE TEST WAS A MOST SEVERE ONE, and the loss of lighting power, under the circumstances, and with gas of the richness of 22·8 candles, was not more than might be expected.

73. It required some little time to clear the apparatus of the oil produced in

* The oil apparatus at Peckham is one-third smaller than those at Barnet.
† One inch and a half in diameter.

the last experiment, and which had to be carefully measured; all was, however, ready for the second experiment upon Clay Cross coal by nine a.m. on the 25th. The meter registered at starting 16,463.

74. This experiment was again to be upon 32 cwt. of coal, worked in eight charges of 4 cwt. each. As in the previous case, the experiment went on quite regularly throughout, the temperature of the retort being a little raised, but only to a very slight extent. There was nothing to record during the daily course of the experiment, which came to an end at nine a.m. on the 29th. At that time the meter registered 29,902; this showed that 13,439 cubic feet of gas had been obtained from the 32 cwt. of Clay Cross coal, or at the rate of 8399 cubic feet per ton.

75. The total quantity of coke, weighed dry as before, was 23 cwt. 3 qrs. 26 lbs., which is at the rate of 14 cwt. 3 qrs. 26 lbs. per ton of coal.

76.—The total quantity of oil obtained from the Clay Cross coal was 19·1 gallons, equal to 11·9 gallons per ton.

77. The quantity of coke burned in the retort furnace in carbonizing the 32 cwt. of coal was 20 cwt. 3 qrs. 25 lbs., or 13 cwt. 0 qr. 12 lbs. to the ton of coal; this is equal to 65·5 per cent. of its weight.

78. The mean lighting power of the gas in this experiment was 20·7 candles; the sulphur impurity being 11·15 grains in the 100 cubic feet of gas.

79. At the conclusion of the experiment the eduction-pipe was opened, but there was no evidence of obstruction in any part of its course.

80. The apparatus was cleared for the experiment on the Pelaw Main coal by the morning of July 1, and the experiment started at nine p.m., when the first charge of coal was placed in the retort.

81. It was determined by Mr. Mellor that the charges should be reduced to 3½ cwt. in this experiment, dividing the 32 cwt. into nine charges instead of eight; this was done with the idea that the small charge might be more effectually carbonized, and no objection was made to the change, as it did not appear to us to be likely to affect the issue of the experiment.

82. At the time of starting the meter registered 29,904.

83. This experiment was carried on to the end without any occurrence worthy of note; the temperature of the retort was kept from 1350 to 1400 of the pyrometer, and its action was uniform and satisfactory.

84. On the 5th, at nine p.m., the experiment was completed, the station-meter registering 43,550. From the 32 cwt. of Pelaw Main coal, 13,646 cubic feet of gas had, therefore, been obtained, which is at the rate of 8528 cubic feet.

85. The quantity of coke weighed dry was 25 cwt. 3 qrs. 21 lbs., or at the rate of 16 cwt. 0 qr. 20 lbs. per ton.

86. The total quantity of oil was 22·3 gallons from the 32 cwt., or 13·9 gallons from the ton of coal.

87. The coke burned under the retort amounted to 22 cwt. 1 qr. 0 lb., or 14 cwt. to the ton of coal. The quantity of coke consumed in the furnace to carbonize the 32 cwt. of coal was greater than that in the two previous experiments, but that is accounted for by the fact that the gross amount of coal was worked off in nine charges instead of eight, and consequently the time consumed was 108 hours instead of 96, or one-ninth more.

88. It may be observed here that the quantity of coke consumed in the carbonization of the coal in these three experiments *cannot in any way be taken to represent the cost of such carbonization commercially.* The fuel used in *the one furnace* would have been almost sufficient to heat *a bench instead of a single retort.* It is, therefore, obvious that the charge for fuel is out of all proportion to the work done. The results of the second experiment at Barnet must be taken as the guide on this point, as they were obtained in the actual practice of gas making, as it was carried on then, and has been ever since, for the supply of gas to the town.

89. The mean lighting power of the gas obtained from the Pelaw Main coal was 19·9 candles, the sulphur impurity being 8·99 grains in 100 cubic feet of gas.

90. At the conclusion of the experiment the pipes were examined as before, but in this, as in the previous instances, there was no obstruction whatever.

91. Reduced to the proportion of a ton, the following are the tabulated results of the three experiments upon Silkstone, Clay Cross, and Pelaw Main coal:—

Coal Carbonized, 1 Ton.	Quantity of Gas Produced.	Quantity of Coke Produced.	Quantity of Oil Produced.	Lighting Power of the Gas.	Sulphur per 100 Cub. Feet.	CokeBurned under Retorts.
	Cub. Feet.	Cwt. qr. lb.	Gals.	Candles.	Grains.	Cwt. qr. lb.
Silkstone.....	8,587	14 0 4	16·4	23·0	8·49	13 0 2
Clay Cross	8,399	14 3 26	11·9	20·7	11·15	13 0 12
Pelaw Main	8,528	16 0 20	13·9	19·9	8·99	14 0 0

92. This brings to an end the experiments upon three varieties of coal. The next thing proposed was to test the gas-yielding properties of the coal oil when distilled in Dr. Eveleigh's arrangement of apparatus.

93. It may be briefly stated that this apparatus consists of three parts, a kind of still heated to a temperature of about 800° or 900° Fahr. into which the oil first runs, and where it is vaporized; a second chamber, or retort, at a higher temperature, into which the vapour passes to be partially decomposed, and from which any condensed vapour or oil produced by decomposition of the first-formed vapour may run back into the still to be revaporized; and, thirdly, a vertical retort, filled with broken-up wood charcoal and heated to full red. In this retort decomposition of the oil vapour is finally effected.

94. When the experiments on the coals were completed at Peckham, the new oil apparatus was still unfinished, and it was the 17th of July before it was quite ready for starting. An experiment with the oil produced in the distillation of the coal was then commenced, but after being continued for some time it was discovered that the apparatus was defective;* it was therefore decided that these results should be abandoned, and that a fresh experiment should be commenced after the apparatus had been made perfect. The necessary repairs occupied a considerable time, and it was not until the 30th that a second start could be made.

95. On the 30th of July, at nine a.m., the oil was turned into the apparatus; at that time the station-meter registered 60,066. The charcoal retort was at full red.

96. The object of this experiment was to ascertain the largest quantity of gas that could be obtained from the oil by repeated distillations of the residual oil, until the greatest limit of exhaustion could be reached, or the oil, if possible, all turned into gas and pitch. Before starting the oil experiment the tanks and receivers were quite emptied of the oil and liquor produced in the previous experiments.

97. The oil-tank used for the supply of the still contained 94·5 gallons. The oil employed in the experiment was oil from Silkstone coal, distilled at Barnet, the specific gravity of which ranged from about 1000 to 1150.

98. July 31.—The oil-still and retort had been working satisfactorily. At 3.30 p.m. the first tank full of oil had been run into the apparatus, 93 gallons having passed. When all the gas was off from the oil the meter registered 61,610, so that the 93 gallons of oil had produced 1544 cubic feet of gas, or 16·6 cubic feet per gallon. The lighting power of this gas was 22·63 candles.

99. The action of the apparatus had to be stopped while the oil-tank was again filled. This was done up to 94·5 gallons of oil, as before, and a second start made at eleven p.m.

100. Aug. 1.—The apparatus continued to work without any check. There had been no symptom of obstruction. Aug. 2.—The apparatus still worked very well up to 3.20 p.m., when the second charge of oil was exhausted, 93 gallons having run into the still as before; the station-meter indicated 63,412, so the second 93 gallons had produced 1802 cubic feet of gas, or 19·3 cubic feet per gallon, an improvement on the previous working of the apparatus. To account for this, at least in some degree, it was said that the second oil was of better quality than the first.

101. As there appeared signs of obstruction in the charcoal retort, the cover was taken off and the charcoal stirred up; the eduction-pipe was also opened; but was found to be *quite clear throughout its length.* In this case, as in the others mentioned, the obstruction was in the upper part of the charcoal retort, in the mass of the charcoal itself, and proceeded from the formation of pitchy cinder in the charcoal.

102. After pumping the oil-tank full a third time a start was made again at nine p.m.

Aug. 3.—Up to seven p.m. the oil continued to run into the apparatus regularly. At that time the charcoal retort showed indications of obstruction, and the cover had to be taken off and the charcoal stirred up. The eduction-pipe was also opened, *but was found quite free.*

103. Aug. 4.—At 4.30 p.m. all the oil of the third charge was over. The meter then registered 64,295, showing that only 883 cubic feet of gas had been produced from about 83 gallons of oil, as about 10 gallons of the last charge of oil were left in the tank.

104. This was all the fresh oil that was carbonized alone. The experiment was continued from this point upon the oil condensed during the carbonization of the 270 gallons of fresh oil. Before beginning, however, it was thought necessary to replenish the charcoal retort with charcoal. When the charcoal which had been used from the beginning of the oil experiment was removed from the retort and weighed, it was found to have more than doubled its original weight. The charge as put into the retort weighed 56 lb., as it was taken out of the retort it weighed 124 lb. The character of the charcoal was also very much altered: it was much denser, and rung almost like metal when struck.

105. Aug. 6.—At 9.30 a.m. the oil experiment was continued upon oil condensed from the oil working between July 30 and Aug. 4; this oil had, therefore, been distilled, and had passed through the charcoal at a red heat, consequently it was a modified oil.

106. The quantity in the tank was the same as before—viz., 94·5 gallons; the whole quantity of oil obtained from the first working of the oil was about 102 gallons; the further 7·5 gallons of oil were added to that in the tank as room was made for it by the passing of the oil into the still. The meter at starting was 64,295.

107. The oil was exhausted at eleven a.m. on the 7th. From this time the oil collected from the condensers was added to the supply-tank as it could be collected, and the experiment was continued until the morning of the 12th, distilling the oil OVER AND OVER again. At length the quantity of oil was reduced to six gallons, when it was no longer practicable to pass it through the apparatus.

108. Between Aug. 6 and 12 the charcoal retort was opened on three occasions, the obstruction arising and being remedied as before; there was, however, never any choking of the eduction-pipes, which remained free to the end of the experiment. On the 12th the charcoal was removed from the charcoal retort, and the 56-lb. charge was found to have become 120 lbs.

109. At the conclusion of the experiment, at ten p.m. on the 12th, the meter registered 67,900, the register at starting, on July 30th, being 60,066; 7834 cubic feet of gas had, therefore, been generated from 270 gallons of oil worked over and over again. There were also collected 17 cwt. 2 qrs. 12 lbs. of pitch, or 14 cwt. 2 qrs. 12 lbs. of pitch per ton of oil. This was, however, a little below the true quantity, as it was rather difficult to collect it all.

110. Taking the weight of the 270 gallons of oil to be 25 cwt., which is somewhat above the real weight, the yield of gas was at the rate of 6267 cubic feet per ton. The mean lighting power of this gas was high, being equal to 25·5 candles. The quantity of sulphur was 4·29 grains in 100 cubic feet of gas.

111. The coke consumed in the furnace of the oil apparatus, from July 30 to Aug. 12, weighed 23 cwt. 1 qr. 2 lbs., or at the rate of 19 cwt. 1 qr. 6 lbs.* for carbonizing a ton of oil to produce 6267 cubic feet of gas.

112. The permanency of the lighting power of the oil gas was tested on two occasions during the experiment. On the 2nd, at four p.m., the small holder was filled and sealed up, the lighting power of the gas being 25·5 candles. This gas was examined on the 6th, at six p.m., and found to have a lighting power of 24 candles. On the 13th, again, the small holder was filled with gas obtained from the last part of the experiment, when oils were being used, which had been once, or even more frequently, passed through the gas generator. The lighting power of the gas was 24·3 candles.

113. This gas was tested on the 17th, at three p.m.; the lighting power was then 20·9.

114. Reduced to the proportion of a ton, the results of this experiment were as follows:—

Oil Carbonized.	Gas Produced.	Pitch Produced.	Lighting Power of the Gas.	Sulphur per 100 Cubic Feet of Gas.	Coke Burned in the Furnace.
	Cubic Feet.	Cwt. qr. lb.	Candles.	Gas	Cwt. qr. lb.
1 Ton.	6267	14 2 12	25·5	4·29	19 1 6

115. The oil experiment being finished, it now only remained to make an additional experiment upon Silkstone coal and oil worked conjointly, as at Barnet, in order to complete the investigation which you had instructed to undertake.

116. This last experiment was commenced on Aug. 13.

117. Aug. 13.—It was considered advisable that the oil should be worked in something like the proportion in which it is produced from the coal, and in accordance with this view it was agreed that 40 gallons of oil should be worked off to the 32 cwt. of coal, which was the quantity intended to be carbonized; that is at the rate of 25 gallons of oil to the ton of coal.

118. The first charge of coal was in the retort at ten a.m. on the 13th, the oil being started running into the oil apparatus at the same time.

The station-meter registered 67,900.

119. It may be mentioned that before commencing this experiment the charcoal vessel was replenished with 56 lbs. of fresh charcoal; the lime purifier was also charged with fresh lime,

120. The temperature of the retort was as nearly as may be the same as before, the pyrometer indicating 1350°.

121. The retort worked well throughout this experiment, as in the others.

122. The oil apparatus, in which the oil from the original 40 gallons, condensed and collected, was worked over and over again until the quantity became too small to be dealt with, also continued to work without any check until the 16th; the cover had then to be taken off, and the short eduction-pipe opened and cleared.

123. The experiment was carried on until the 17th, but the oil had been exhausted the day before; a very little oil was left at last, and that was mixed with water, so that it could not safely be run into the still.†

124. On the morning of the 17th the last charge of coke was drawn. At that time the station-meter registered 85,022; consequently, in the experiment with 32 cwt. of coal and 40 gallons of oil, 17,122 cubic feet of gas had been generated. It is clearly impossible to apportion the yield and value of the gas to the coal

* Leaky.

* This large quantity of coke was used to distil over and over again, and to exhaust the oil, but not as in the ordinary course of gas making.

† This should have been used with the oil, and not separated.

and oil respectively; but, taking the weight of the mixed materials to be about 36 cwt., and the gas from the oil to equal in proportionate quantity that from the coal, the yield of gas was approximately 9500 cubic feet per ton; or, in other words, from a ton of coal and the proportionate quantity of oil—that is, 25 gallons—*about 10,500 cubic feet of gas had been obtained.**

125. The mean lighting power of the gas was 24·9 candles, and the quantity of sulphur in 100 cubic feet was 6·29 grs.

126. The coke produced from the 32 cwt. of coal in this experiment was 22 cwt. 2 qrs. 7 lbs., or at the rate of 14 cwt. 0 qr. 11 lbs. per ton. The pitch produced from the oil weighed 1 cwt. 2 qrs. 14 lbs., or 1 cwt. to the 25 gallons of oil proportionate to the ton of coal.

127. The quantity of coke burned in the furnaces amounted to 27 cwt. 2 qrs., or about 20 cwt. under the coal-retort, and 7 cwt. under the oil-still and retort.

128. These results agree very well with those previously obtained, at least so far as they can be compared. There is one thing, however, which is very important; the heats were considerably raised in this experiment, and towards the end the pyrometer indicated 1550°. This accounts for the greater yield of gas, as in all the previous experiments the temperature had been kept down, and had never exceeded 1350° by the pyrometer.

129. At Barnet, however, towards the end of the second experiment, the yield of gas was almost as great as in this last experiment at Peckham.

Reduced to the proportion of a ton of coal, *plus* 25 gallons of oil, the results show as follow in the tabulated form:—

Materials Carbonized.	Gas Produced.	Coke obtained from the Coal.	Pitch obtained from the Oil.	Lighting Power of Gas.	Sulphur per 100 Cub. Feet of Gas.	Coke Burned under Coal Retort.	Coke Burned under Oil Retort.
	Cub. Feet	Ct. qr. lb.	Ct. qr. lb.	Candles.	Grains.	Ct. qr. lb.	Ct. qr. lb.
Coal 1 Ton. Oil 25 Gals.	10,500	14 0 11	1 0 0	24·9	6·29	20 0 0	7 0 0

130. In the preceding pages we have presented you with an account of the experiments carried out at your desire, and the results of the same, in as much detail as appeared to be necessary; it now becomes our duty to offer an opinion upon the character and value of your system.

131. The leading idea of this invention appears to be, that, by a particular manner of working, a ton of coal and the quantity of oil produced from a ton of similar coal, can, together, that is together in the sense of quantity, but worked separately *secundum artem*, be made to yield a larger quantity of gas of much higher lighting power than can be obtained from such coal when treated according to the ordinary practice of gas making. This is the proposition involved in Dr. Eveleigh's invention.

132. The main difference between this system and the ordinary system, so far as the working of the coal is concerned, is in the temperature of the retorts, in the time of the carbonization, and in the manner in which the gas is removed from the retort. In the results claimed to be obtained, there is also the important difference that by the ordinary method, a certain quantity of gas of comparatively low lighting power is obtained, the highly carbonized tar not being considered of any value for gas making, whilst by the system now under consideration, the coal is made to yield a somewhat less quantity of gas of high lighting power, and a quantity of tar or oil valuable as a gas-yielding material.

133. There can be little doubt that the vice of ordinary gas making is the employment of high temperatures, perhaps almost unavoidable when large charges of coal have to be worked off in a few hours; at all events, the experiments at Barnet and Peckham show that, where the temperature is carefully modified, a considerable yield of gas above 9000 cubic feet, of the unusually high lighting power of 22 candles, may be obtained. At Peckham, one ton of Silkstone coal, and 25 gallons of oil, yielded about 10,500 cubic feet of gas of 24·9 candles lighting power; and as the highest yield of gas from oil alone was 29 cubic feet per gallon, it would appear that only about 725 cubic feet out of the 10,500 could have been produced by the oil, leaving about 9775 cubic feet as the yield of the coal alone. This is a remarkable result when we consider the high lighting power of the gas, and so far as concerns the distillation of the coal alone, we consider that the statements made to us at the commencement—viz., that between 9000 and 10,000 cubic feet of over 20-candle gas might be obtained from Silkstone coal, is borne out by our experience both at Barnet and Peckham, although in the first experiments at each of those places the yield of gas was considerably below that amount. This is indeed entirely a question of temperature. When the heat of the retorts was raised at Barnet, towards the end of the second experiment, and also at Peckham, in the last experiment, where the pyrometer indicated 1550°, the yield of gas came up to near 10,000 cubic feet per ton, and this without any great diminution of lighting power, which seems to show that there is a range of temperature within which the illuminative products are not destroyed to any great extent.

134. The quantity of coke burned under the retorts to obtain this result, which is no doubt due, among other causes, to the slow development of the gas from the coal, is, however, much above that employed in ordinary gas-making; in the second experiment at Barnet, nearly 33 per cent. of the weight of the coal carbonized was consumed under the retorts.

135. There is a notable circumstance connected with this slow distillation at a comparatively low temperature; for, referring back to the table of hourly production, it will be seen that the ratio of production remains very even almost to the last hour, which is not so much the case when the carbonization is carried on at a high temperature and is therefore more rapid. In point of fact, the results of these experiments bear out on the whole the general experience upon this subject, viz., that the quality of coal gas is very much in proportion to the temperature employed; that is, supposing the temperature to start from the point where gas-making may be said to practically commence, this may be taken to be about 1300° of the pyrometer, which indicates a red heat, thoroughly visible in daylight. The best results would seem to be obtained, taking quantity and quality together, at between 1500 and 1600 of the pyrometer; the previous figures show that at that temperature the bulk of gas obtained is considerable, and the lighting power also high. Against the increased value of the gas there must, however, be set *the enhanced cost of working incident to the length of time occupied by the coal in the retorts;* indeed the matter, so far as the distillation of the coal alone is concerned, resolves itself very much into the question whether, taking into consideration the difference in plant, fuel, wages, &c., it is most advantageous to obtain a given quantity of say 20-candle gas, with six grains of sulphur per 100 cubic feet, the charges taking twelve hours to work off, or an increased quantity of 13 or 14-candle gas, with from 25 to 30 grains of sulphur per 100 cubic feet, by working the charges in six hours.

136. It did not appear to us that there was much practical difference in the quantity or quality of the coke yielded by the coal in these experiments: in quality the coke is perhaps superior to common gas coke, but as to quantity we had no means of judging with exactness, as we could not make a comparative experiment upon the coals employed under the ordinary gas-making conditions. The amount of sulphur impurity, which cannot be removed by ordinary purification, was in all the experiments very much below the usual standard; in respect to this point our results are likewise confirmatory of the statements of the inventor, and it is a point of considerable importance in estimating the value of his mode of working.

137. With respect to that part of the system which relates to the conversion of the oil into gas the results were less favourable than those obtained with the coal, and compare disadvantageously with the production of gas of similar quality from cannel coal.

138. In the experiment upon the conversion of oil, 270 gallons of oil, when distilled over and over again, so as to push the decomposition of the oil to the most extreme limits, yielded only 7834 cubic feet of gas, or, as was stated before, one ton of oil produced about 6267 cubic feet of gas of 25 candles lighting power; to effect this, more than 19 cwt. of coke were burned under the still and retort. It may be said that the arrangement of furnace was not the most advantageous that could be devised, and that the fuel was burned to great waste; that may be so, but the result of the experiment at Peckham was as stated—viz., that a ton of oil and 19 cwt. of coke were required to produce 6267 cubic feet of gas and 14½ cwt. of pitch. One ton of oil at twopence per gallon would be worth about £1 17s., and the 19 cwt. of coke, say, taking ordinary price 12s.; total, £2 9s. On the other side there are 6267 cubic feet of gas, worth at 5s. 6d. per thousand, say, £1 14s., and 14½ cwt. of pitch worth 22s.; total, £2 16s., against £2 9s., leaving a balance of 7s. to pay all charges of working, wear and tear of plant, interest upon capital, &c. It must be obvious that, taking the above figures as data, the cost of converting oil into gas by Dr. Eveleigh's process is far too high to permit of its competing with cannel coal in producing gas of equal lighting power, setting aside all regard for the fact that making gas from cannel coal is a much simpler and more certain process than making it from oil in the apparatus which we have had under consideration. These circumstances also seem to show that the oil might be sold at a price which would make it more valuable as an oil than as a gas-making material, which is indeed probably the case, as it differs from common coal tar, and would no doubt fetch a higher price in the market.

139. Although when compared with ordinary gas-making, under the conditions which prevail in London and other large towns, this part of Dr. Eveleigh's process is without question at a disadvantage, and we are compelled to give an opinion unfavourable to it, there are no doubt places and circumstances in which the conjoint working of the coal and oil may prove useful. The value of the gas obtained from the oil was very high as respects its lighting power, and it served to raise the value of the gas from Silkstone coal alone from a mean of 23·0 candles to 24·9.

140. In the working of the oil, everything again seems to depend upon the temperature employed. When the apparatus was started, and kept for some time at a moderate heat, the process went on without any check or difficulty; but when, as was the case towards the end, the temperature was somewhat raised, choking of the charcoal retort commenced and recurred several times.

141. A difficulty which had been anticipated, never, however presented itself in these experiments, that is the choking of the pipes leading from the retort, or oil apparatus; this never happened; after every experiment all the eduction pipes were opened, as we have described, and they were in all cases found free from obstruction.

142. There was also another point of importance to which our attention was directed—viz., to the permanency of the gas. The experiments made in relation to this matter showed that the gas maintained its lighting power under very severe trials. The details of these experiments have been given in the body of this report, and the results were such as to show that practically the gas produced under this system possesses as much permanency as gas of equal lighting power from cannel coal.

143. In conclusion, gentlemen, we think it right to express our thanks to you and to the officers of your company for the courteous assistance which you and they afforded us throughout this long investigation. Mr. Mellor, your consulting engineer, did everything in his power to forward our views; and Mr. Thorman, who conducted the experiments on your behalf with great intelligence and assiduity, also assisted us in every way; our thanks are likewise due to Mr. Fraser for his assistance.

We have the honour to be, Gentlemen,
Your obedient Servants,
(Signed) T. W. Keates.
Dec. 23, 1872. William Odling.

Rectory House, Martin's Lane, London, E.C.
Dec. 30, 1872.

The Directors of the Patent Gas Company.

Gentlemen,—The accompanying copy of the report of Mr. Keates and Dr. Odling on your patent process of making gas, was placed in my hands by your secretary on the 25th instant. The original report was opened by him in my presence on the previous evening.

At your request I have most carefully perused and considered it, and now beg to offer such remarks thereon as I think necessary, in order to arrive at a just conclusion on the merits of the system.

It should be borne in mind that this examination, undertaken at your special request, was the most severe one to which the system could have been exposed, and I have much pleasure in testifying here to the extreme care and jealous watchfulness and fairness with which Mr. Keates and his assistants carried out every part of their lengthy examination; no weak point was covered, nor do I believe any strong one left out. Unfortunately, my engagements abroad would not permit me to remain present during the latter part of the oil experiments at Peckham, but I have before me all the notes taken at the time by Mr. Fraser and Mr. Thorman, and I am therefore able to use them as if I had been present during the entire course.

This examination has brought out most completely and satisfactorily, and established, beyond doubt, the statements of the inventor on the chief points of merit in his patented process of gas-making, among which are:—

1. The high illuminating power of the gas obtainable from common coal, both in its first distillation, and from the oils produced therefrom.
2. Its freedom from sulphur impurities.
3. That whilst maintaining the high illuminating power, there is no decrease, but an absolute *increase* in the quantity of gas yielded by the distillation of the coal and oil.
4. The permanence of the gas, and its power of retaining its lighting properties under the most severe trials.
5. The increased weight and quality of the coke produced.
6. The quantity and richness of the oil, and the quantity of pitch left as residuum after distilling the oil into gas.
7. That there is no choking or stopping up of the eduction-pipes during the production of the gas.

The only points upon which any doubt is thrown, or unfavourable opinions expressed, are:—

1. The quantity of oil yielded per ton of coal.
2. The quantity of gas obtained from the oil.
3. The time occupied by the first distillation; and,
4. The amount of fuel or coke required for the whole process.

The conclusions arrived at really being, that the first portion of the process is excellent, but that there is considerable doubt in the minds of the examiners whether the oil is not more valuable as an oil, pure and simple, than as a gas-producing material with the attendant cost of apparatus, fuel, and labour.

In measuring the quantity of oil obtained from the coal, as stated in paragraph 67 of the report, they say that the yield was equal to 16·4 gallons to the ton, but that it was "*difficult to collect it wholly, or to separate it from the liquor which was mixed with it.*"

From notes taken at the time, it appears that the utmost care was taken to separate the oil *entirely* from the liquor and light watery oils. This is strongly

* Again exclusive of the oil produced from the coal at the same time or during the distillation.

objected to by the inventor, for he has all along held that it is an essential part of his process, that these light watery oils should be left with the heavier ones, vaporized and distilled with them together, and decomposed and converted into permanent gas. The separation, therefore, accounts for the smaller quantity yielded in that part of the process; further experience in the working has shown that the presence of watery vapours with the oily gases has the effect of keeping the charcoal free from any obstruction, and this, together with an improvement suggested during this examination, and made in one of the stills now working at Barnet, has had the effect of keeping the charcoal clear, for it is now and has been working for the last six weeks without any stoppage whatever, whilst the quantity of gas obtained is considerably increased.

In paragraph 88 it is clearly stated, "*that the quantity of coke consumed as fuel during these experiments cannot in any way be taken to represent the cost of (fuel in) such carbonization commercial.*" In my opinion these remarks equally apply at Barnet, where only ten retorts were used; and yet, even there, and under adverse circumstances, the fuel, as shown in paragraph 49, was only about 40 per cent. This does not, to my mind, require any comment, for it is well known to every practical gas engineer that the proportion of fuel in small and large works bears no comparison, and I have no doubt whatever (from further experience in working at Barnet) that the "fuel account" in moderate sized and large works will not exceed 20 to 25 per cent. of the coke produced, especially when it is considered that there is so little breeze made in this process.

The experiment on the three kinds of coal tried at Peckham clearly shows from the results that the patent process applies equally to various kinds of coal, for it is well known that Clay Cross coal will not compare with Silkstone or Pelaw Main coal for gas purposes, and yet the quantity and quality of gas derived from this coal is nearly equal to the others, but the oil was not so rich.

However good any invention may be, or however great may be the care bestowed in designing the apparatus at the outset it is well known that experience in working suggests alterations in the details of the machinery and appliances. In our case, many improvements have resulted from our experience in the practical working of the process at Barnet.

It is now found practicable, and we are working the charges of coal off in eight and nine hours instead of twelve, as heretofore, and I am of opinion that, with well-made clay retorts, the iron retorts are not required, either in the first or second parts of the process; indeed, the heat necessary to maintain in the charcoal chamber for the complete decomposition of the watery vapours and oils (about 1600" Fahr.) requires that clay, instead of iron, should be used. These changes reduce very considerably the first cost of the apparatus, and the wear and tear also.

Considerable improvements have been made in the arrangements of the oil apparatus, and larger vaporising pans have been substituted. This has had the effect of reducing the consumption of fuel. Each apparatus will now distil 100 gallons of oil per 24 hours, and the expenditure of coke is only 300 cwts. per still. The proportion, therefore, is now one re-distillation apparatus to each set of 10 mouthpieces or retorts.

The comparisons drawn in paragraph 138 of the report in reference to the fuel used at Peckham, in "*pushing the decomposition of the oils to the most extreme limits,*" has nothing whatever to do with the commercial part of the question, for it cannot be supposed that an experiment of this kind bears at all on the regular ordinary working of the system. I do not think, therefore, that the figures therein named call for any explanation whatever on my part.

The broad results of this most severe and critical examination are to my mind most satisfactory and conclusive as to the *quantity*, *quality*, and *purity* of the gas produced by your patent method, whether by the first or single distillation of the coal alone, and the value of the oils resulting therefrom, or by the combined process; and also as to the permancy of the gas and the facilities for producing it economically by your system.

The advantages obtained by the employment of low temperatures in the distillation of coal by your process are very great, both as regard the illuminating power and quantity of gas produced, and cover with a very large margin, the only points which can possibly be urged against the system—namely:—

"The additional cost of apparatus, and the space occupied," and

"The additional cost of fuel and labour."

These combined will not amount to more than 3d. or 4d. per 1000 feet at the outside, whereas the value of the additional illuminating power over that of gas made from common coal, by the ordinary process, which we may take as stated in the report (paragraph 133), as

10,500 cubic feet of 24·9 candles,

whilst the ordinary method would not give more than 10,000 feet of 15·9 candles —or a gain of 9 candles in illuminating power on say an average of 10,000 cubic feet of gas.

The actual cost of this additional quality, as stated in the evidence given before a parliamentary committee during the enquiry in reference to the metropolitan gas companies is 2½d. per candle per 1000 cubic feet at the then prices of coal and cannel (and this sum is charged by gas companies in the west end of the metropolis for their cannel gas above that of ordinary, or what is termed "common coal" gas), or equal to 1·10½ per 1000 feet, or 18s. 9d. per ton of coal. This would be considerably enhanced at the present prices of coal and cannel.

This question of illuminating power, and freedom from sulphur impurities, must and will force itself on the attention of the public, both from the economical and from the sanitary points of view. The importance of obtaining a purer light without vitiating a greater quantity of air in closed or even open apartments than is necessary, cannot long be overlooked, and the increasing scarcity and dearness of cannel coal will necessarily lead every gas manufacturer to adopt the best methods extant for increasing the amount of light obtainable from common coal.

Yours faithfully,

(Signed) T. Randolph Mellor,
Consulting Engineer.

NEW JOINT-STOCK COMPANIES, LIMITED,
Brought out during the Year ending the 31st of December, 1872.

Name of Company.	Capital Authorized.	Capital Offered.	Amount of Share.	Deposit.	Total Deposit.
	£	£	£ s. d.	£ s. d.	£
Air Gas Light	200,000	200,000	5 0 0	1 0 0	40,000
Alta California Water Supply, &c.	500,000	150,000	100 0 0	30 0 0	45,000
Berlin Phosphate Sewage and Manure	300,000	150,000	10 0 0	2 0 0	30,000
British & Foreign Water & Gas Works	800,000	400,000	10 0 0	1 0 0	40,000
Cadiz Water-Works	350,000	200,000	10 0 0	5 0 0	100,000
Dutch Water-Works	110,000	110,000	10 0 0	3 0 0	33,000
East Cornwall Fire-Clay and Brick	60,000	41,000	10 0 0	5 0 0	20,500
Gas, Water, & Sanitary Works Construct.	400,000	200,000	10 0 0	3 0 0	60,000
General Sewage and Manure	200,000	175,000	10 0 0	2 0 0	35,000
Goux Manure and Sanitary	85,000	67,770	10 0 0	2 0 0	13,554
Lawe's Chemical Manure	600,000	600,000	10 0 0	4 0 0	240,000
Montevideo Gas	500,000	500,000	20 0 0	4 0 0	100,000
New Gas Generator	250,000	170,000	10 0 0	5 0 0	85,000
Odessa Water-Works	850,000	600,000	20 0 0	5 0 0	150,000
Petersburg and Viborg Gas	1,500,000	150,000	10 0 0	2 10 0	37,500
Phosphate Manure	200,000	100,000	5 0 0	1 0 0	20,000
Railway & General Light Improvement	100,000	50,000	1 0 0	0 5 0	12,500
Sewage Disinfecting and Manure	120,000	120,000	10 0 0	2 10 0	30,000
Steam Stoker	130,000	100,000	10 0 0	4 0 0	40,000
Town Manure	500,000	150,000	10 0 0	4 0 0	60,000
Urban Phospho-Manure	100,000	35,000	10 0 0	4 0 0	14,000
W. of Eng. Fire-Clay, Bitumen, & Chem.	200,000	100,000	5 0 0	2 0 0	20,000

BILSTON GAS COMPANY.

The Twenty-Seventh Annual Meeting of this Company was held on Monday, Jan. 6—Mr. William Hatton presiding.

The directors report was as follows:—

The trade account for the year exhibits net profits amounting to £2955 3s. 8d., which, with £289 1s. 3d. brought forward from last year's accounts, will make a total of £3244 4s. 11d. at their disposal. This amount the directors propose to appropriate as follows: Half year's dividend of 4s. per share, paid Aug. 1, 1872, £1200; half year's dividend of 4s. per share, payable Feb. 1, 1873, £1200; amount carried to reserve-fund, £200; balance forward to next year's account, £644 4s. 11d.; total, £3244 4s. 11d. The reduction in the price of gas, referred to in their last report, has not diminished the profits of the past year. This satisfactory result arises chiefly from the favourable character of the company's contracts for the purchase of coal; but as these contracts have chiefly expired, the cost of producing gas at the existing rates for labour and materials is very much increased. The directors, however, have endeavoured, to a small extent, to meet this increased cost by a trifling advance in the price of gas. That advance is by no means adequate to the increased cost of labour and materials, but the directors hope that it will not be necessary to further raise their charges.

The Chairman congratulated the shareholders on the satisfactory state of the accounts. The directors had had difficulties to contend with. One of these was some dissatisfaction amongst the workpeople of the company; but the difference, such as it was, had been adjusted satisfactorily. The increased cost of the coal the chairman estimated at 60 per cent., as compared with last year. As to the future, he might say that they would probably experience a great demand on their reserve-fund in the ensuing year. This would arise out of the necessity that existed for the increasing of their manufacturing facilities. Because of the want of storeage room the company was unable to supply all the gas that was demanded of them. Hence the directors were now looking out for a suitable site for new works. When they had succeeded some £2000 or £3000 would be required. The expenditure might have been undertaken in the past year but for the extraordinary price to which iron had risen. The directors had adopted every improvement to make gas as cheaply as was practicable. Of this all the consumers would experience the benefit. He moved the adoption of the report.

Mr. Wood seconded the motion, and it was adopted.

On the motion of the Chairman, seconded by Mr. Cremonini, the dividend was declared.

Mr. Hatton and Mr. Price were re-elected directors; and to fill the vacancy occasioned by the retirement of Mr. Pugh, Mr. Kearns was elected.

The Chairman testified to the energy and ability that the various officers of the company had brought to bear in the discharge of their several duties; and, upon his motion, they were thanked.

The proceedings closed with a vote of thanks to the chairman.

LEEDS (CORPORATION) GAS SUPPLY.

DISCOUNTS TO LARGE CONSUMERS.

As reported in the Journal of the 17th ult., the Leeds Town Council, at their meeting on the 2nd of December, discussed at some length the question of discounts to large consumers, and the resolution ultimately arrived at was to refer the subject again to the Gas Committee for consideration. At the meeting of the council on the 1st. inst. the following memorial on the subject from the Leeds Chamber of Commerce was read:—

Chamber of Commerce, Leeds, Dec. 16, 1872.

To the Right Worshipful the Mayor of Leeds.

Mr. Mayor,—The council of this chamber has been informed that the committee of the Town Council having the management of the gas-works are proposing to reduce the discount allowed to large consumers to 10 per cent., being 15 per cent. less than under the old system. Even admitting that the corporation would be justified in making all the profit they can, without any consideration for the other interests of the town, the policy of reducing these discounts appears to this council to be very questionable. Notwithstanding the present high price of coal, it is well known that gas can be made at not much above half the price which the large consumers now pay, and it is only by the liberal discounts voluntarily offered that they were induced to take the gas from the old companies; and, whilst, as a rule, the large consumers will sacrifice something in order to save themselves the trouble of making their own gas, yet it is very certain that the bulk of them will not pay 50 per cent. or 60 per cent. more to the corporation than they can themselves manufacture it for. Even with the present discounts, it is understood that some large consumers are about to make their own gas, and the course proposed by the corporation cannot but be a strong inducement to others to follow the example, the consequence will probably be that we shall have from 80 to 100 separate gas-works in the town. Although it will be possible by law to prevent any great nuisance from these works, yet there will be some degree of nuisance created, which, whilst individually too small to be within the power of the law to prevent, yet will, in the aggregate, be of very considerable magnitude, and detrimental to the health of the town, and we shall then have on the one hand large sums spent to improve the sanitary condition of the town, and on the other an increase in the causes of its present unfavourable state. It is well worth consideration whether, if a large number of our principal gas consumers make their own, the profits on the town gas will not be less than now, in which case the corporation will be spending money to improve the sanitary condition of the town, and also losing money by a policy which has a tendency to deteriorate it. This council does not know how far the corporation considers itself bound by the agreements made and understandings come to by the old gas companies, but in the opinion of this council some consideration of them is desirable, and, unless there are strong reasons for ignoring them, they should not be disturbed. Many of the largest consumers used to make their own gas, and were induced by the gas companies to give up doing so on the companies undertaking that they would allow these discounts. Whether the corporation is bound by these agreements or not, it cannot but be admitted that parties who have on the faith of them destroyed their plaint, &c., suffer an injustice in being compelled to replace them, or else sacrifice the inducement for destroying them. This council need not dwell upon the fact that the corporation must in the end derive as much profit from the large consumers getting the discount as from small ones consuming an equal quantity of gas, as the expense of collecting the accounts, the forming of so many junctions and keeping them in repair, the leakage of gas which such numerous junctions render inevitable, and, in addition to these, the leakage of the accounts, will, it is supposed, be little, if anything, less than the discount allowed to the large consumers. This council is well aware of the strong temptation which the corporation will naturally feel to keep down the rates as much as possible; but the wisdom of doing so in this way is at least doubtful. The profits are really paid by the ratepayers, and the only difference is that they do not feel it when taken indirectly so much as when taken directly, but this is in reality the old question of indirect or of direct taxation, and it is generally considered that the direct taxation tends to secure strict attention on the part of the payers of it to the economy or otherwise shown by their representatives, whilst indirect taxation tends to relax such attention, and allows extravagance and mismanagement to be more easily submitted to. The corporation may undoubtedly plead that if a profit is made for it which would otherwise go into the hands of private undertakers, as with the old companies, no injury is done, yet it must be considered that the corporation enjoys a monopoly, and therefore there are no means of ascertaining what reduction of price might be made by a company. If the large gas consumer saves as much in rates as he loses in the price of gas, no harm is done; but if otherwise, it will amount to a tax on the industries by which the town exists, against which this council protests. The council would beg to add one remark—namely, that when questions of this kind are once settled, the settlement should, unless under very special circumstances, be adhered to, at any rate for some length of time, as the reppening of them tends to generate a feeling of uncertainty which is on many accounts undesirable. This council would be glad if you will kindly bring this letter under the notice of the Town Council and of the committee having charge of the gas-works,

Wm. Baxter, Vice-President.

The Town-Clerk said the best answer to this would be found in the following resolution, reported to the council that day by the Gas Committee, viz.—"That in the opinion of the committee it is not desirable to make any further alteration in the discounts allowed upon gas accounts."

The memorial was referred to the Gas Committee.

At the meeting of the committee on the 8th the above memorial was taken into consideration, and the committee resolved to adhere to their former decision, which was to the effect that on and after the 1st inst. the discount to be allowed to consumers of gas will be one-half the present rate on accounts under £400, and 15 per cent. on accounts above £400.

PROPOSED PURCHASE OF THE ALLIANCE AND DUBLIN CONSUMERS GAS-WORKS BY THE CORPORATION.

On Monday, the 30th ult., the Corporation of Dublin met in "committee of the whole house," to consider the proposed agreement with the gas company for the sale and transfer of their undertaking to the municipal body. The LORD MAYOR occupied the chair. There was a large attendance of members of the council, and the public, who were invited to attend, were represented by several influential citizens. At the outset of the proceedings it was agreed that not only the members of the council, but that members of the public should be at liberty to make any remarks which suggested themselves in the course of the debate. It was also resolved that Mr. Cotton's estimate be considered item by item.*

Alderman TARPEY said the importance of that estimate could not be overrated, because the estmate in fact was the gas question. He was dealing with the estimate of Dec. 28 last, as it struck him forcibly that the original estimate of Dec. 4 was fallacious. He had dissected that estimate, and he impeached it for more reasons than one, because he believed that some of the items were not borne out by the facts. The estimate properly charged for the city 5s. 6d. per 1000 cubic feet for gas, and the townships, with the exception of Bray, 4s. 6d. per 1000 cubic feet. But the estimate of 770 million cubic feet as the quantity of gas sold in the city and townships he asserted to be not correct. It was an over estimate. When his attention was attracted to the fact that the corporation of Manchester were selling gas at 3s. per 1000 cubic feet, while at the same time they added £66,000 to their treasury, he asked himself the question why should not the Corporation of Dublin be able to take charge of the gas supply with advantage to the public? He believed it was contrary to the fact that the consumption of gas was 770 million cubic feet, and that the estimate was 20 per cent. in advance of the real figure. Having taken some trouble in the matter, he went to the works, and he should bear testimony to the readiness which Mr. Stevenson and the other officers exhibited to give him every information. He had ascertained that for twelve months the consumption of gas was 629 millions of cubic feet for the city and township. He took his data from that. Mr. Cotton allowed 26 per cent. for leakage, so that he would have to make 886,500,000 cubic feet of gas to get 629 millions, or rather 770 millions of cubic feet. That leakage was much in excess, as he would afterwards show. It was admitted by the best authorities that the increase in the consumption of gas annually was about 10 per cent. Taking a decimal, ·330 per cent., would give a consumption of 640 million cubic feet, and he would take his stand on that figure. He adopted the estimate of Mr. Cotton as to wear and tear, labour, maintenance, salaries, &c, though that estimate was based on a consumption of 110,000 tons of coal. He estimated that 91,000 tons would produce 640 million cubic feet. The estimate put by Mr. Cotton on coke, tar, and ammonia was at least 30 per cent. under the real value; but taking his figure of 10s. 7d. per ton for coke, tar, &c., the sum produced upon 91,000 tons would be £48,154 3s. 4d. The meter-rents at present yielded £4500, and the old materials, &c., £500. The gross receipts, therefore, from the manufacture of gas, &c., on the basis of a consumption of 640 millions of cubic feet, would be £224,550. The yield from the products was based upon the consumption of 91,000 tons of coals, though if 110,000 (Mr. Cotton's figures) was adopted, the yield would be £9000 more. Then came the expenses. The cost of 91,000 tons of coal, at 27s. per ton, was £122,850. The other items of expense, estimated at 9s. 9d. per ton, came to £44,362 10s. 6d. Rent and taxes, £7200. Dividends and interest, £42,037. The total expenses would be £216,449, and this deducted from the total income, £224,550, would leave a net profit of £8100. Mr. Dennehy and Mr. Cotton estimated the price of coal at 27s. per ton, and the quantity of gas per ton produced 9500 cubic feet. But he (Alderman Tarpey) had ascertained from those who knew best that coal guaranteed to produce 10,000 cubic feet of gas would be delivered in the city of Dublin for 21s. per ton. Finding that to be a fact, there was a saving of 6s. per ton, which, on 91,000 tons, would amount to £27,300. It was well-known that the leakage of the Alliance Gas Company was at least from 30 to 32 per cent., while some of the most eminent writers at the other side of the channel informed them that when a gas leakage to the extent of 12 per cent. existed the profit on the balance was lost to the shareholders. At 12 per cent. the leakage would amount to £2860. The coal ought to produce 10,000 cubic feet per ton, as stated, and this gave an increase of 500 cubic feet over the present yield. The gain on 91,000 tons would be 45,500,000 cubic feet, and the reduction of leakage at 12 instead of 32 per cent., as could be realized, would give an increase of 51,870,000, and these quantities added, and charged for at 5s. 6d. per 1000 cubic feet, gave £26,776. After paying 6 per cent. dividend and 4½ per cent. to the bondholders, the handsome sum of £62,177 would remain. Now, the question was, how was that to be disposed of? He would reduce the price of the gas, and supply it to the city and the townships at the same price (4s. 6d. per 1000), which would reduce the surplus by £32,000. He would next abolish the meter-rent, £4500, leaving a sum of £25,000 to be applied to whatever purpose the corporation might see fit, either to the improvement of the streets, the reduction of taxation, or the grand jury tax. He was certain that his figures and conclusions were perfectly correct, and he defied any one to contradict them. He calculated that they would on his estimate have a surplus of profit of £62,177 13s. 4d. How would they dispose of that handsome sum? He would throw out a suggestion—reduce the price of gas to 4s. 6d. per 1000 feet. He would make no difference between the price in the city and that for the township. That reduction of 1s. in the 1000 cubic feet brought down the surplus profit by £32,000. Then there was a rent charged for meters at present, and that was felt by many to be as obnoxious as the income-tax. If Mr. Cotton took his advice, he would take that £4500 a year off, and that would reduce the profit by £36,500, leaving a balance of £25,000 to be applied to any useful purpose the council might think proper, such as cleaning the streets, reducing the taxes, &c.

Alderman REDMOND would very much prefer that they should have independent skilled opinion on the scheme. It was premature at present to take up any general statement. A document had been put into his hand in reference to financial details. He wanted to understand that, and he thought they should lay down some course of action, by which the council and the public might be enlightened as to the merits of the important question before them.

Mr. BAGOTT, hon. secretary of the council of the Chamber of Commerce, being called on, said the members of the chamber had no desire to interfere in opposing this project. There were, however, matters in the bill which startled some people very much. One of these was the power of taxation which the bill gave. It had been, he thought, from the commencement, represented in argument by the gentlemen who were in favour of taking over the works, that there would be an ample surplus, which would enable the corporation to devote a considerable sum yearly for the benefit of the city. That would be a very good thing if it were the case; but it did appear strange that in the face of that, and in the face of that argument, power should be taken in the first instance to tax to an amount not to exceed 6d. in the pound, and that even after that power should be taken to tax the citizens without any limit whatever. They (the outsiders) would like to have more information on that point, for on reading the bill in the first instance they were startled that the corporation sought power to tax the city for the supply of gas. It brought out an entirely new idea of taxation, for every householder would be taxed whether he used the gas or not, and it would come before every man now as a matter seriously affecting his pocket. Many persons would not have the gas in their private houses at all. On behalf of the Chamber of Commerce, he assured them that that body desired to meet the corporation in the most kind and respectful manner in this and in every other matter. It was due to the corporation that they should be so met, as the representative body of the City of Dublin.

Mr. BYRNE said Mr. Baggott, like many other prominent citizens, was evidently labouring under a mistake as to the scope of this taxation clause. The estimates laid before the house showed that the project would be a profitable one to the citizens at large, but it was intended by those who took the initiative in the matter that the corporation should not continue to pay 6 per cent. to the shareholders for a lengthened period, but that they should be enabled to borrow from the Government at 3½ or 3¾ per cent. the entire amount, and in order that they should be so enabled it was absolutely necessary that they should have a *mandamus* clause in the bill in relation to taxation, so as to be able to give the Chancellor of the Exchequer security for the payment of the interest and the instalments of the loan. That was a principle well known to the gentlemen who had to do with the Pipe Water Committee, and knew the immense sum it had taken to construct these works. The operation which those clauses in the bill were intended to have would still further increase the profits of the concern by the difference between 3¾ or 3½ per cent. and 6 per cent., which they were bound to pay to the shareholders. He submitted that he had answered Mr. Baggott's statement.

Mr. T. PIM, jun., observed that the firm he represented was one of the largest consumers in Dublin, they approved of the proposal to hand the gas-works over to the corporation. He held it was right in principle; he thought that the city ought to do its own business, and that a monopoly of this sort, which should and ought to be a monopoly, ought to be in the hands of the council of the city of Dublin. Therefore he, individually, approved of the project, and hoped it would be carried. But it was one thing to approve of a principle, and another to approve of the details of the scheme by which it was proposed to carry it out. Outsiders like himself really knew nothing of the project, and they were of opinion that the gentlemen forming the corporation were very much in the same position. There was, therefore, great danger in acting offhand, without having first employed trained intellect to investigate the matter thoroughly. Moreover, he was satisfied that the citizens of Dublin would have a suspicion about the whole transaction unless some independent persons were employed who understood the whole question. The citizens of Dublin asked the corporation to protect their interests by employing such persons as he had alluded to to investigate the whole matter. It should not be supposed that in making these remarks he was going to discuss the merits of the various clauses of the bill—he knew nothing about them. With reference to the statement that persons might be taxed who did not consume the gas, it should be borne in mind that the same thing occurred regarding the consumption of water; there were always inequalities in these things that could not be prevented. If the corporation got the gas-works into their hands it was to be expected that there would be a great extension in the consumption of gas, and by a reduction being made in the price of gas a class of persons would take it who had not done so up to the present. He would ask the council to appoint a joint committee, with power to call the aid of engineers to inquire into the whole matter, and whatever opinion that committee arrived at would, he was certain, be accepted by the citizens.

Mr. ROONEY, as a member of the Chamber of Commerce, objected to the taxing powers sought for in this bill, which broke through one of the first laws of equity and the principles of political economy by requiring non-consumers to pay for consumers. It should be borne in mind that in the city of Dublin there was now a lot of over-taxed householders. He disputed the analogy sought to be established between the gas and water supply, because water was one of the first ingredients in life, while gas was not. There were several thousands of houses in Dublin in which gas had never yet been taken. These houses were rated at from £8 to £20, and the corporation wanted to make them pay from 4s. to 10s. a year for the sake of the consumers getting their light a little cheaper. They might as well buy up all the distilleries in Dublin, and say to the teetotallers that they should contribute in order that whisky might be obtained at a lower price. There were about 5000 houses in Dublin that used gas to a very limited extent, and their gas bills were very low; but if the city lights were reduced, these men would be called upon every year, in addition to their present taxation, to pay from 16s. to 50s. The 25th clause of the bill empowered the corporation to come down on him and every citizen at the rate of 6d. in the pound.

Mr. BYRNE: In certain cases.

Mr. ROONEY said the fear that the corporation threw on this bargain by inserting such clauses made him suspicious. They had no right to enter on a speculation that would throw an additional burden on the poorer classes, who were already over-taxed. The city of Dublin was the most heavily taxed in the kingdom. They had been paying taxes because some of the finest parts of their city had been given away by a stroke of the pen. They had been paying the lavish expenses of bygone corporations.

Alderman REDMOND said in England powers had been obtained for the purposes of such taxation, and in no one instance had it been objected to.

The LORD MAYOR observed that in one city in England, that had been frequently alluded to in the course of the debate, the poor-rates alone were 8s. in the pound, exclusive of any municipal taxation.

Mr. WIGHAM, as one connected with many gas questions in Dublin, remarked that he was not at present in a position to form an intelligent opinion with regard to the project under discussion. He suggested that they should appoint from among the citizens a small committee, and associate them with a small committee of that house, so that the true merits of the question might be more

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* Mr. Cotton's estimate of income and expenditure for supplying with 20-candle gas the city of Dublin and the townships at present supplied by the Alliance and Dublin Consumers Gas Company; the quantity of gas sold being 770 million, after allowing 26 per cent. for leakage.

RECEIPTS.

Gas manufactured and sold from 110,000 tons of coal, at 9500 cubic feet per ton—less 26 per cent. allowed for leakage, say 770 million at 5s. 6d. per 1000		£211,750	0 0
Products—coke, tar, &c.—at 10s. 7d. per ton		58,208	6 8
Meter-rents as at present		4,500	0 0
Miscellaneous—old material		500	0 0
		£274,958	6 8
Total expenditure	£209,205 8 4		
Six per cent. on £590,000	35,400 0 0		
Interest on bonds	6,637 0 0		
		251,242	8 4
Surplus		£23,715	18 4

EXPENDITURE.

110,000 tons of coal, at 9500 cubic feet per ton, at 27s.	£148,500	0 0
Purifying materials, at 3d. per ton	1,375	0 0
Supervision and labour in the manufacture, at 3s. 5d. per ton	18,791	13 4
Wear and tear, distribution and maintenance of mains and services, at 4s. 1d. per ton	22,458	6 8
Salaries, at 4·34d.	1,989	3 4
Collectors commissions, at 6·39d.	2,928	15 0
Charges, including stationery, at 3·14d.	1,439	3 4
Repairs of meter, as per contract	1,998	6 8
Law charges, at ·35d.	160	8 4
Rent and taxes	7,200	0 0
Bad debts	2,364	11 8
	£209,205	8 4

City Hall, Dublin, Dec. 12, 1872. W. F. COTTON.

rapidly arrived at. The accuracy of the fundamental figures of Mr. Cotton was of immense importance; the accuracy of those figures should be first ascertained, and that would properly be the province of a small committee like that he had suggested.

Mr. BRIDGEMAN opposed the project, on the ground that the corporation was not the proper body to carry it out. The first cost price would be £800,000, and he asked, if that were a private matter, would not the corporation be the last body in Dublin to which they would hand over £800,000. He did not think the present question was of as much importance as that of the Vartry Water. If the gas company struck, and said, "We will charge you 6s. per 1000," he could supply himself with light otherwise. He thought that the citizens would be very foolish in entrusting £800,000 of their money into the hands of the corporation. He would ask Mr. Byrne did the corporation possess any taxing powers at present that they had not put upon the citizens? Though he was not a member of either body, he was a practical engineer. The corporation never took a project in hand that they would find more difficult to manage. If they made a blunder in dealing with it, he defied them to remedy it. If they took this vast concern over without a thorough investigation of the mains and all the appliances for producing gas, they would get themselves into a difficulty. He believed that, instead of there being a surplus, as anticipated by Alderman Tarpey, there would be a deficit. He advised them to be cautious in dealing with this question; they had plenty of time to consider it, for gas was not one of the necessities of life.

The LORD MAYOR stated that he had received a letter which it would be well to read.

The TOWN-CLERK then read the following letter:—

To the Committee of the whole of the Dublin Corporation.

My Lord and Gentlemen—We, the undersigned burgesses, being employed in the lamp and gas-fitting trade of Dublin, have heard that it is the intention of the corporation, in their bill before Parliament for the purchase of the interest and works of the Alliance and Consumers Gas Company to have inserted therein a clause (see No. 51) to empower the corporation to sell, hire, or otherwise trade in gas-fittings, lamps, &c., for public or private use. We can scarcely think that the Corporation of Dublin, representing as they do the interests of the traders of the city of Dublin, are fully aware of the serious injury such a proceeding, wholly unwarranted, would inflict on our trade. The Alliance and Consumers Gas Company, seven years ago, upon a representation to this effect having been made to them by the trade, generously and at once relinquished the sale of gas lamps and fittings &c., as unfairly competing with the private trade. And we trust that the Dublin Corporation, to whom we look as the leading institution of the city to foster and encourage its trade and commerce, will not permit such a clause as is alluded to to be inserted in the bill, being totally unnecessary and quite beyond their province as gas makers.—We are, my Lord and Gentlemen, yours respectfully (Signed by 15 firms.)

Mr. BYRNE begged to state that the letter read was written under a misconception. There was no such clause in the bill as had been stated. The corporation did not take power to supply private fittings in private houses. They only took power to supply lamps, columns, and pipes from the mains into the houses.

Mr. T. READ, as a heavy ratepayer, protested against the corporation taking up any project that might lead to further burdens upon the heavily-taxed citizens. He believed, if the gas company could make more of their undertaking, they would not hand it over to the corporation. He was altogether opposed to the scheme, and he hoped the citizens would meet daily to prevent their representatives from misusing the public funds in taking up a project that would tend to their injury and ruin.

Mr. BYRNE desired to repeat that the corporation sought no interference with the trade of gas-fitters. The clause in the bill was similar to one in the gas company's Act, and it was merely to enable the corporation to supply lamps, columns, and pipes of supply into private houses as far as the meter and no farther, leaving it to the consumer to employ whom he pleased to put up the fittings. With regard to Mr. Bridgeman's uncomplimentary observations, he wished to state that he did not accept that gentleman's estimate of the corporation. He believed the corporation were not a whit inferior to English and Scotch corporations in business capacity, and desire to do their best for the public; and when he found both English and Scotch corporations had taken up the local gas companies, and managed them prudently, properly, and profitably, he did not see why the Dublin Corporation should not be able to do the same. The terms of purchase by the Dublin Corporation were much more favourable than in the English and Scotch cases. The Dublin Corporation were getting the undertaking at 13½ years purchase, while on the other side of the Channel the corporations paid on an average 22 years purchase. He was convinced that this project would be eminently profitable to the city. Alderman Tarpey, though he found fault with some of the figures in the corporation estimate, and worked on his own materials, yet had brought out a large profit. But neither he nor any other member of the committee could pretend to be a competent gas engineer, or to form a perfectly correct opinion as to whether the undertaking would be profitable or otherwise. And what the reference to the committee enabled to be done was to consult the best engineers in the world, the best accountants in the world, and lay before them all the figures, all the data, all that had been said or written for and against the project, and then be guided by their sound advice in the matter.

Mr. DENNEHY proposed—"That a public accountant be appointed to examine into and investigate the accounts of the Alliance and Consumers Gas Company from Dec. 31, 1870, to Dec. 31, 1872, and to report to this committee the result of such investigation." He thought the question lay in a nutshell. By the gas company's accounts, it appeared that their receipts of all kinds for the year ended June 30, 1872, were £139,452, exclusive of meter-rents. Mr. Cotton's estimate of gas receipts, when the corporation took charge of the works, was £211,750. Here, at the outset, was a difference of £72,298. The company's receipts for products last year were £33,924. Mr. Cotton's estimate for products when the corporation had the gas-works was £52,808. This, with Mr. Cotton's previous increase, amounted to £96,582. And he thought that Mr. Cotton's prospective increase of revenue for gas was at once and effectively met by the fact that the directors of the company, in March last, held out no hope whatever of any increase in that direction. By the figures that had been put before them there was at one jump an addition made to the revenue of the concern of £100,000 a year. He did not think that estimate was warranted. Any one who would examine Mr. Cotton's estimate, and the report of the committee of the council, would find that the latter was a very legitimate comment upon it, borne out by the circumstances and facts of the case. He believed that Mr. Cotton's estimate of the charges likely to accrue in connexion with the working of the concern was enormously underrated. The only item in which that gentleman had made a liberal allowance for expenditure was that of wear and tear; and where gas of high illuminating power was manufactured, the expenses on that head were likely to increase. He did not think, in the history of municipal institutions, a wilder scheme had ever been put before a council. There was nothing in the argument of Councillor Byrne that the supplying of gas to the consumers had been taken up by other municipalities in England or Scotland, because he (Mr. Dennehy) believed that, most unfortunately, the same thing that had occurred once before was occuring again. One of the causes which led to the rotten boroughs of England and Scotland being swept away, forty years ago, was creeping over them again. Their interference with the trade and commerce of the municipalities—their interference with every species of jobbers in their localities—their alienation of the property which had been handed over to them——

Mr. DOCKRELL rose to order.

Mr. DENNEHY: I am not alluding to this corporation.

Mr. DOCKRELL again rose to order.

Mr. DENNEHY referred Mr. Dockrell to "Chambers' Encyclopædia" for information on this subject. If Mr. Dockrell had educated his mind on this subject he would find that what he was stating was a fact—that the character of municipal corporations was deteriorating. They ought not to do anything that would involve additional taxation upon the people of Dublin. He was very sorry to say that they had not properly watched the interests of the citizens, and that they had allowed Dublin to be sacrificed for the townships. He would bring that subject before the council, and he would show how, year after year, they had sacrificed Dublin to the lordly owners of those townships. He feared that the same would be the case if this project was carried. He advised them to approach the matter quietly and as practical men.

Alderman REDMOND then proposed the following resolution:—"That the council of the Chamber of Commerce be requested to nominate ten citizens to act on the Gas Committee already appointed by this council as a joint committee, for the thorough investigation of the gas question, with power to obtain the necessary assistance of eminent engineers, accountants, and others they may select, for the purpose of investigating all estimates and every detail necessary for the thorough understanding of the question, and that they report without delay to this house."

Mr. DENNEHY withdrew his own proposition, and seconded this resolution.

The LORD MAYOR thought that it was not competent for the meeting to entertain the resolution as then framed; that it was a matter for the council.

Mr. DOCKRELL approved of the object of the resolution.

Alderman GREGG supported the memorial read from the traders in gas-fittings, and said they only required the corporation to do what the Alliance Gas Company had on a former occasion generously done. They would not, he said, be satisfied with anything less than the entire erasure of the clause from the bill, or at least the omission of the word "private," conferring upon the corporation power to supply gas-fittings for private use.

Mr. BYRNE said he thought it would be a confession of incompetency on their part if they went before the council on Wednesday with such a request as was contained in Alderman Redmond's resolution. Why not now nominate eminent engineers, in accordance with the order of reference sent to them? The round-about method proposed would merely protract the inquiry, and carry them into the month of February, when the bill would be in all probability before a parliamentary committee. He approved of the principle of Alderman Redmond's resolution, but he objected to it for the reasons he had stated.

Mr. DENNEHY maintained that the course proposed would in the end prove the shortest, because if they did not take the leading citizens of Dublin into their confidence, they would be opposed by them before the House of Commons, and the result would be an enormous expenditure.

The resolution, having been altered so as to recommend the council to request the council of the Chamber of Commerce to nominate ten citizens, for the purpose stated, was put from the chair, and carried almost unanimously.

The proceedings then terminated.

BOSTON PUBLIC LIGHTING.

An Adjourned Meeting of the Local Board was held on the 27th ult., to receive the reply of the gas company to the resolution passed at the special meeting on the 23rd ult., as reported in our last.

The CLERK read the gas company's reply, which was a simple rejection of the board's offer *in toto*, and a determination to abide by their demand of £4 5s. per lamp.

The MAYOR said that unless they could come to terms mutually and satisfactory to both parties, which he still thought within the limits of possibility, the board would have to provide a substitute for gas for lighting the town on and after the 1st of January. He thought, however, that a rearrangement of the scale of hours the lamps are lighted and the substitution of four for five feet burners, might form the basis of a satisfactory agreement. It seemed from the terms of their Act that while the gas company could compel the local board to burn by meter, the board was powerless to make the company supply the meter. He reminded the board of their right to demand that the gas supplied for the public lamps at the lowest rate charged to any private consumer, and added that what that lowest rate might be the gas company would be able to show.

Mr. BEDFORD considered it perfect nonsense to talk about their being supplied at the lowest rate charged to private consumers unless they had meters for the measurement of their consumption, for by no other means was it possible to ascertain whether they got what they paid for.

Mr. MALTBY said they were not solely at the mercy and control of the gas company. They had the power to call in the services of an arbitration if they chose to exercise it. He hoped they would allow the town to be put in darkness rather than submit to any such exorbitant demand.

Mr. BAILEY considered the question had been thoroughly ventilated, and was now reduced to a very narrow issue. It was simply this—Was the board to submit to the dictatorial authority of the gas directors or to choose and act for itself? He considered their offer of Monday night to allow the half year to end five or six weeks earlier than formerly, or to pay by meter indication, a meter being affixed to every tenth lamp, was fair and business-like. After the refusal of an offer so reasonable, he, for one, would say let the town be put in darkness for twelve months, rather than yield to the exorbitant demand of £4 5s. per lamp. There were other means of lighting the town, and at less expense than by gas. He would, therefore, move—"Seeing that the gas company are so determined that they will not supply the Sanitary Board with gas for the public lamps per average meter indication, the Sanitary Board agrees to do without the aid of the gas company for that purpose."

Mr. THOMAS had great pleasure in seconding the resolution. He thought it would not be difficult to light the town without gas until the price of coals came down—if dear coals were the cause of the extravagant demand—or until the gas directors came to their senses. For this purpose he would suggest the appointment of a small committee to arrange the details of a new system of lighting the lamps, so that the streets should not be left in darkness after the expiration of the contract with the directors.

Alderman WRIGHT could not contemplate the possibility of the town being placed in darkness without feeling deep concern. It seemed to him that whoever was responsible for such a state of things would be justly chargeable with an act of criminality. He wished, therefore, for the board to stand right with public on the matter. He would suggest that counsel's opinion be taken on the question.

The MAYOR: But we shall be in darkness before such an opinion can be had; for you would not be able to find a barrister in London at present.

Mr. WRIGHT wished to know if the surveyor could point out another method than by meter of ascertaining the quantity of gas consumed?

Mr. WHEELER said the matter was simple enough: the governors could not admit of more than five feet being consumed per hour. They could change the five feet for four feet burners if they chose.

Mr. KITWOOD concurred in the remarks of Alderman Wright as to the risk of putting the town in darkness. He was inclined to accept the gas company's terms. He could not make a proposition to that effect, owing to his being a shareholder, because he believed the advanced price would only be temporary in its operation: he did not think it would be for more than twelve months.

Mr. KENINGTON thought a meter to every lamp would meet the difficulty and satisfy all parties.

Mr. STORR said that the surveyor's computations showed that each lamp now consumed £3 5s. worth of gas, leaving nothing whatever for cleaning, &c. He

thought the dispute might be settled by reducing the number of hours and the consumption from five to four feet per hour. The lamps now consumed 16,905 feet each; there was no need for nearly so large a consumption.

Mr. BAILEY said that was the assumed consumption, but he was satisfied they burnt nothing like that amount.

Alderman WRIGHT, repeating his fears as to the consequences of allowing the town to be placed in darkness, said he would move an amendment in the spirit of Mr. Bailey's motion, and he hoped Mr. Bailey would be able to second it. He took this course because he thought that every means of approaching the directors had not been exhausted, and because he was satisfied that they must ultimately come to a meter system of some kind. His amendment was that the board offer to take the gas by meters affixed to every lamp, and that 10s. 6d. per lamp be allowed for cleaning, &c.

Mr. RADLEY wished to know what would be the cost of placing a meter to every lamp.

The SURVEYOR thought it would not much exceed £2.

Mr. BAILEY could not second Mr. Wright's amendment, because he thought the offer to burn by average meter indication—one meter to every 10th lamp—was all that could reasonably be expected.

Alderman CLEGG asked whether it was a fact that a rate had been made and partly collected in which provision was made for lighting the public lamps for the next three months.

The COLLECTOR answered in the affirmative.

Alderman CLEGG: Then I take it the board is bound to light the town.

Mr. BAILEY: Of course; but it does not follow that we should use gas.

Mr. MALTBY: There is no Act of Parliament to compel us to burn gas unless we choose.

The amendment of Alderman Wright was not seconded.

On the motion being put it was carried. The following resolution was also carried with only two hands held up against it:—"That a committee be formed, consisting of Councillors Swinn, Radley, Maltby, Bailey and Best, with the surveyor, to purchase or hire 100 lamps at once, and that this meeting be adjourned until Monday night at seven o'clock to receive a report of the proceedings of the committee."

A further adjourned meeting was held on the 30th ult.

The MAYOR stated that the committee met on Saturday morning, and he (the mayor) had an interview with the deputy-chairman of the gas company, and it was arranged between himself (the mayor) and some others that an undertaking should be given that the lamps should be lighted 21 days after the 1st of January at the same rate as the board was now now paying—viz., £3 5s. per lamp per annum, the difference between that amount and the sum asked for by the gas company to be paid from private sources. He made a point of waiting upon the committee and informing them of this arrangement without delay, and asked them whether they had any objection to receive a deputation from the gas company. The reply being favourable, he saw the deputy-chairman of the gas company again, and it wa agreed that a deputation from the directors should meet the committee, if no objection was raised on the part of the board at this meeting. If the board was willing that this interview should take place he thought it would lead to good. In the meantime the lighting of the lamps would go on as usual, and be continued for 21 days.

Mr. BAILEY, as one of the committee appointed to arrange for lighting the town without the aid of gas, remarked that the committee met on Saturday morning, and again in the afternoon of that day, and it was decided that they should go to London to look out for lamps, &c. He was still satisfied that the board was acting right and fairly towards the gas company and the ratepayers in making the stand they had against the demand for an increased charge of £1 per lamp. As the mayor, however, had guaranteed the lighting of the lamps for a period of 21 days after the 1st of January at the existing rate, to give time for the committee to discuss the question with a deputation from the gas company, he would say no more on the subject at present, but conclude by moving the following resolution:—"That the offer of his worship the mayor to guarantee the lighting of the public lamps from the 1st to the 21st of January, 1873, at the rate of £3 5s. per lamp per annum, to be paid by the board, on the same terms as the last contract of the gas company, be accepted; that the committee appointed at the last meeting will be happy to receive a deputation of the gas directors on Monday morning next, at eleven o'clock, in the Assembly Rooms, to try and come to terms for lighting the public lamps by meter, &c.; and that the committee report progress at the monthly meeting of the board to be held on Monday evening next."

Alderman WRIGHT seconded the proposition. The whole tendency of the discussion on this question had been to show that they must come to a meter system of some kind at last, and the board, as stewards of the public, could not be satisfied with any other settlement of the difficulty. The time had gone by when it was necessary to censure the conduct of the directors of the gas company. They had had their fair share of censure, if any body of men in this world ever had. He did not say they had not deserved it, but as they were now disposed to make the *amende honorable* by meeting the board there was no further need for censure, for it was most likely that terms would be come to which would be satisfactory to all parties. He considered the thanks of the board were due to Mr. Bailey for carrying this matter on to what now promised to be a satisfactory issue.

After some further conversation, the motion was put, and carried unanimously, and a vote of thanks was given to the mayor for his conduct throughout the negotiations.

At the meeting of the board on the 6th inst., the MAYOR reported the settlement of the dispute between the board and the gas company. He said the committee appointed by the board had received a deputation from the directors that morning, and it was eventually arranged that the public lamps shall be lighted up to the 9th of June (when the half year shall be considered at an end), at £1 15s. per lamp, and that after the 1st of July the charge shall be by meter indication, at a price not greater than that charged to any consumer. The resolution of the 27th of December to do without the aid of the gas company in lighting the public lamps was rescinded.

A public meeting of the consumers was held on Friday evening, the 3rd of January, at the Guildhall, when a resolution was adopted approving of the course taken by the council in reference to the public lighting, and pledging the ratepayers to resist any advance in price to private consumers.

ADVANCES IN THE PRICE OF GAS.—At St. Neots (Hunts) the price of gas has recently been raised to 8s. 4d. per 1000 cubic feet, and at Blairgowrie it has been raised to 7s. 6d. per 1000 cubic feet.

BRIGHTON AND HOVE GENERAL GAS COMPANY.—On the 30th ult., at a meeting of ratepayers, held at the town-hall, Brighton, it was resolved, on the motion of the mayor, to sanction the Town Council in applying the district rate to the expense of opposing the bill of this company in the next session of Parliament.

THE INSTITUTION OF CIVIL ENGINEERS.—This society has now been in existence fifty-five years, having been established on the 2nd of January, 1818. It was incorporated by Royal Charter on the 3rd of June, 1828, and the numbers of the several classes constituting the corporation on the 1st inst., were—16 honorary members, 759 members, and 1151 associates, with a class of students attached of 267; together, 2193. Ten years ago there were on the book, 20 honorary members, 413 members, 574 associates, and 10 graduates, together, 1017 of all grades. The class of graduates was abolished in the year 1867, when the class of students was instituted.

NEWTON-STEWART GAS SUPPLY.—Owing to dissatisfaction felt with the quality of the gas formerly supplied, a number of the inhabitants of this town resolved some time since to form a new company. This was accordingly done, and as the works have been erected and the pipes laid, the gas of the new company is now being used. The cost of the new undertaking will be, when all is completed, nearly £3000.

THE STEAM STOKER COMPANY, LIMITED.—During the past week it was announced that, by permission of The Gaslight and Coke Company, the steam stoking apparatus, erected under one of the patents purchased by this company, can be seen in operation daily at the Beckton works between the hours of two and five o'clock. It was also announced that the Alliance and Consumers Gas Company have given permission for the inspection of the apparatus in operation daily at their works in Great Brunswick Street, Dublin.

COLCHESTER GAS COMPANY.—This company have issued a circular informing the shareholders that in consequence of having purchased a larger stock of coals than usual in the autumn, combined with their extraordinary price, and the increased cost of the other materials used in the manufacture, as well as the restricted rate at which the company is obliged to supply the gas to the consumers, they are not able to declare the usual interim dividend in January.

MEMPHIS (U.S.A.) GAS COMPANY.—The *New York Tribune* of the 27th ult. gives an account of the damage done on Christmas-day by the breaking up of an immense ice gorge, 15 feet high, 1 mile wide, and 8 miles long, which had formed in the Mississippi four miles above the city of Memphis. Among other casualties, 200,000 bushels of coal in barges were swept away and sunk in ten minutes, the owners losing 130,000 dols. The gas company lost 10,000 bushels, and the city is now threatened with total darkness, as there is not 3000 bushels on hand, and no means exist of getting it here.

PARTICK, HILLHEAD, AND MARYHILL GAS COMPANY.—The feeling of dissatisfaction created in the suburban districts of Glasgow respecting the differential rates applied by the Gas Commissioners to consumers within and beyond the corporation boundary, resulted last year in the formation of the above-named company, the directors of which are about to apply in the ensuing session of Parliament for statutory powers. The Corporation of Glasgow have resolved to oppose the bill, and at their meeting on the 31st ult. they approved of the appointment of a sub-committee to take the necessary steps for the purpose. Meantime the company have constructed their works, and on the 27th ult. commenced the delivery of gas in some parts of their district.

NOTTINGHAM GAS AND WATER SUPPLY.—A special meeting of the Town Council of Nottingham was held on Monday, the 6th of January—the Mayor in the chair—when the bills to be promoted by the gas and water works companies in the next session of Parliament were taken into consideration, and it was resolved to oppose the same. A committee was appointed to conduct the opposition, and authority was given them to effect any compromise which they may think expedient in the interests of the ratepayers and the council, or to agree to any terms for the transfer of the respective undertakings to the corporation that they may think advisable, or to enter into any preliminary negotiations for that purpose.

MANCHESTER (CORPORATION) GAS SUPPLY.—At the meeting of the City Council on the 8th inst.,—the Mayor presiding—it was proposed—"That the General Purposes Committee be requested, in connexion with the report on the suggested equalization of the township and highway rates throughout the city, also to report upon the position of the council in relation to the gas and improvement departments; and that the committee be instructed to consider whether an equitable arrangement cannot be arrived at by which the present mode of dividing the gas profits might be abolished, and, in consideration of the city taking over the liabilities of the gas Improvement Committees, the gas-works and all lands now belonging to the township of Manchester declared to be the property of the entire city." The motion was carried by a large majority.

ENTERTAINMENT TO GAS WORKMEN AT DUNDEE.—The Gas Commissioners *employés*, together with their friends, held their annual festival on Saturday evening, Dec. 28. Mr. B. M. M'Crae, manager, presided, supported by Mr. Matthew, treasurer, and Mr. Moir, convener of works. After tea, the chairman read a letter from Provost Cox, stating that circumstances deprived him of the pleasure of being present, and expressing a wish that they would enjoy a pleasant evening. He then delivered a most cheering address, reviewing the achievements of former years, and expressing an opinion that this year's transactions would turn out well. Although this might be termed the year of dear coal, still the consumers were getting gas as cheap as ever—as cheap, if not cheaper, than any town in Scotland. Each one had his part to perform in conducting the concern, and although the best came short at times, he was satisfied the men honestly and truly tried to do their duty; and he thought it a good thing that they could lay everything aside for an evening, and enjoy themselves along with their friends in such a sociable way. After an address by Mr. Moir, an excellent programme of readings and vocal and instrumental music was creditably gone through, Miss M'Crae presiding with great acceptance at the pianoforte. After awarding the usual votes of thanks, a most harmonious evening was brought to a close by the company singing "Auld Lang Syne."

GAS STOKERS STRIKE AT MIDDLETON.—At the monthly meeting of the Middleton and Tonge Improvement Commissioners, held on the 31st ult., the minutes of the Gas Committee, which contained details of the dispute which led to the recent strike of stokers, was read. The application of the stokers was for 6d. a day advance in their wages, and a reduction in the hours of labour. Inquiries were made by the clerk, at the direction of the committee, as to what wages were paid at several other gas-works, and it was found that the wages paid at Middleton, with one exception, were the highest. The committee therefore decided not to advance the wages, but agreed that 21 cwt. should be taken off the charges, thereby reducing the labour. The men, not agreeing with this decision, came out on strike. It was then decided to advertise for other stokers, offering 5s. per day wages (the amount paid to the turn-outs was 4s. 6d.), and instructions were given to summon the turn-outs for leaving work without notice. It was further ordered that none of the turn-outs be re-engaged. At the Middleton Police Court, on the 2nd inst., six of the stokers—viz., Barney Cassiday, George Cowper, William Lever, William Porter, John Chelmsley, and William Coglin—appeared to answer summonses at the instance of the commissioners, charging them with a breach of contract by leaving work without giving the required notice. For the defence it was contended that there was no case against the defendants, inasmuch as the men had given verbal notice to the manager that if the demand for an advance of 6d. per day was not conceded they would leave off work at the end of a week from that time. The bench held that there had been a breach of contract on the part of the defendants. As the prosecution did not press for a heavy penalty, a fine of 2s. 6d. and costs, amounting to 12s. 6d., would be inflicted on each of the defendants.

PROCEEDINGS AGAINST GAS STOKERS AT BIRMINGHAM.—At the Erdington Petty Sessions, on the 1st inst., before Messrs. Bedford and Smallwood, three stokers—Elias Roberts, Isaac Collins, and Alfred Johnson—were charged by their employers, the Birmingham Gaslight and Coke Company, with neglecting their work. By the terms of their agreement the gas stokers in the company's service were not permitted to be absent from work without the sanction of Mr. Cross, the superintendent of the Saltley station. On the 21st of December

the first-named defendant should have been at the works, ready to begin his toil; but he absented himself till Monday, the 23rd ult. It was admitted, however, by the foreman, William Wiggins, that a wheeler, named Knowood, had informed him at seven o'clock that the defendant was unwell, and was not able to work. Mr. Rowlands, who appeared for the defence, urged that Roberts was literally disabled from working by illness, and produced a certificate from a practising chemist to prove his allegation. As to the understanding that a written notice should be sent when a workman wished for temporary absence, he could only say that the defendant was unable to write, and had taken the only possible course in deputing a fellow-labourer to acquaint the foreman of his inability to attend. The charge against Isaac Collins was next gone into. The defendant had worked the whole of Sunday, the 22nd of December, and was required to continue at work till five o'clock on Monday morning. This was explained to be a custom at the gas-works once a fortnight. The defendant, it was alleged for the prosecution, had abandoned his work at about two o'clock on Monday morning. He had, however, worked three draws on Sunday night. The defence was that Collins had worked a whole day, and was engaged upon a second turn of twelve hours without intermission of labour, when he was prevented from continuing his work by an abscess upon his finger, and by a general cold. He had complained of illness to the foreman, and had discontinued his work at two o'clock. He had not left the works, however, till three hours afterwards. The defendant had subsequently been under medical treatment, and a certificate was produced from the surgeon to this effect. Mr. Rowlands admitted that it might appear a singular coincidence that two men should be ill at the same time; but he thought the court would see that there was nothing extraordinary in this, when they understood that there were no fewer than 170 stokers employed at the Saltley Gas-Works. In the third case, Alfred Johnson was charged with neglect of work on the 21st. ult. The circumstances were similar to those of the previous cases. The defence in this case, as in the others, was that of illness. The defendant, it was maintained, was suffering from a rupture. The foreman acknowledged that Johnson had complained to him of being unwell, but he had told him that he could not dispense with his services, as he had no one to replace him. Mr. Rowlands said he could not think the company would press for punishment. Even supposing that the breach of contract had been proved, there was no evidence upon which the amount of damages could be assessed. But he did not admit that there had been a breach of the agreement, and if the magistrates held the same opinion it would be unnecessary to consider damages at all. Mr. Evans assured the bench that it was not the wish of the directors to urge summary proceedings if the men were really ill and incompetent to discharge their duty. The company were not arbitrary in their dealings with their men. They were large employers of labour, and their operatives were well paid, and had constant work. But when he mentioned that the make of gas had been curtailed to the extent of 889,000 feet per diem for weeks some past, at the risk of almost total darkness, by the irregularity of the men in attending to their work, the bench would see that the directors were compelled to adopt measures to terminate the evil. If Mr. Rowlands would convince him that the defendants were suffering from illness, he would take upon himself the responsibility of withdrawing the charge. Mr. Rowlands believed that the evidence he had already adduced was convincing. The defendants, he said, promised to work regularly in future, and to observe the rules of the company. Eventually the proceedings were adjourned for a fortnight, to allow an opportunity of a private arrangement.

WINCHESTER WATER SUPPLY.—Dr. Stevenson, F.R.C.P., Lecturer on Chemistry at Guy's Hospital, has recently reported on the quality of the water supply of this city as follows:—"This is a chalky water of good quality. It is perfectly clean, colourless, and destitute of odour. So far as can be ascertained by chemical analysis, it is entirely free from recent animal contamination. The water is well suited for domestic use where a moderately hard water is admissible. Most of the hardiness is readily removed by boiling the water for a short time."

GLASGOW (CORPORATION) WATER SUPPLY.—At the monthly meeting of the Water Committee, on the 30th ult., it was reported that the revenue for the financial year 1872-3, up to the 23rd of December, amounted to £76,640 1s. 4d., while at the same date in 1871 the amount was £73,617 8s. 9½d., being an increase of £3022 12s. 6½d. In reply to a question by the Lord Provost as to the progress being made in laying the new water-mains from Mugdock reservoir, Mr. Gale stated that the bad weather had been against the contractor proceeding rapidly with the work. It should have been finished in March, but he did not see that it could be completed now before June or July.

FOLKESTONE WATER SUPPLY.—At a special meeting of the Town Council on the 20th ult., a deputation from the water-works company attended for the purpose of submitting reports by Dr. Letheby and Dr. Taylor as to the purity of the water supplied by them to the town. Mr. R. Hart, the clerk of the company, said: "A variety of statements had been made on the subject which had created much unpleasantness, and involved considerable correspondence in the newspapers. This controversy, and these statements seriously affected the town. The company having done all in their power to answer these slanders by producing the highest medical testimony that could be obtained, proving the complete purity of the water, they felt they had done their duty, and now it was for the corporation to take the matter up, and to assert the groundlessness of the statements which had been made, and which were so detrimental to the interests of Folkestone. There were two gentlemen connected with Folkestone, who from their position, exercised considerable influence—Dr. Bence Jones and Mr. Bowles. These gentlemen had made assertions about the company's water which they believed it was their duty to refute. Now they had a complete answer to the letters which they had written on this subject. They must recollect this was a very grave subject. The company supplied the town with water, they had no other source from which to get their supply, and any imputation upon its purity was a question that more affected the interests of the town than that of the company. The wish of the directors was that the council would cause printed copies of the reports made by Dr. Letheby and Dr. Taylor to be placed in a conspicuous part of the town-hall, and there kept for the perusal by the public. After a long discussion on the subject, it was resolved to comply with the request of the company.

LIVERPOOL WATER SUPPLY.—A special meeting of the Liverpool Town Council was held on the 1st inst., at which the Water and Baths Committee submitted certain amended regulations for service-pipes and fittings. Amongst other matters, it is provided by these regulations that persons requiring a supply of water shall provide and maintain at their own cost all requisite service-pipes and fittings within, and one foot beyond, the boundary of their premises, and in the case of premises outside the borough, or business premises within the borough, the work shall be done by the servants of the corporation, and paid for by the applicants. The corporation shall publish the names of such plumbers as will undertake the necessary work, and these tradesmen will be held responsible to the corporation for the proper execution of the work. Every separate service-pipe must be provided with a stop-cock and box, which, in all cases within the borough, will be fixed at the expense of the corporation below the street, and outside the private premises. No water-closet or urinal will be allowed to be supplied direct from a service-pipe, but must be supplied from a cistern; and no water-closet shall be supplied by a tap of any kind. Cisterns for all water-closets must be on the alternating valve principle, and of the best construction. They must be constructed not to deliver more than two gallons of water at a flush, and the pulls of the cisterns must be so constructed as to prevent their being fixed in any position that will allow the water to flow continuously. The down pipe from the cistern to the basin of the closet must be of not less than 1¼ inch in diameter, and, when of lead, it must be of not less than 9 lbs. to the lineal yard. The pans or basins of all water-closets must be of a semicircular shape. No steam boiler or any description of closed boiler will be allowed to be supplied direct from a service-pipe, but the supply will be given through a meter, and a self-acting check valve must in every case be fixed on the pipe so as to prevent a return of the water. At the suggestion of the Houseowners Association the committee had also adopted the following resolution:—"This committee recommend that in all cases of future appointments of waste water inspectors the officers appointed shall have sufficient knowledge of plumbing to enable them to effect at the cost of the corporation the following repairs. The putting of new leathers to valves and taps, repairing wire attachments, adjusting bath cocks and oiling apparatus; and that all repairs of a more expensive character, such as grinding taps and making solder joints, should be done by private plumbers at the expense of the persons supplied as at present." The regulations were approved and adopted.

THE SEWAGE DIFFICULTY AT BIRMINGHAM.—At a meeting of the Birmingham Town Council, held on Tuesday, January 7, the position of the town in regard to its sewage difficulty, was reported upon by the special committee recently appointed. The report set forth the steps which had been taken to abate the nuisance at the sewers outlet outside the town. By the admission of the Gravelly Hill relators that nuisance had been abated, and upon this state of things the Vice-Chancellor had suspended the issue of the sequestration until the second seal in Easter term. The difficulty with Sir Charles Adderley still continued. Messrs. Hawksley, the engineers consulted on the subject, had reported to the council that the process of precipitation by lime of the Birmingham sewage at the Saltley works had been in operation for a sufficient length of time to demonstrate that a complete clarification of the water might be effected if sufficient tank room were provided. In consequence of the rejection of the Birmingham Sewage Bill, the committee said it appeared to be the duty of the council to use every possible exertion to proceed with the work of the interception of the contents of privies and ashpits so far as their present legal power enabled them, aided by the voluntary co-operation of owners and occupiers of property; and the committee recommended the council to proceed without delay to discharge this duty. The work could best be done by the staff hitherto employed in the collection of nightsoil, and the committee proposed that the supervision of the nightsoil department should vest in the Sewage Committee. The committee further submitted a plan prepared by the borough surveyor of Salford, showing how the structural alteration of privies was effected for the purpose of intercepting fæcal matters, and preventing them from entering the sewers. Resolutions were moved authorizing the Sewage Committee to introduce the system of interception and weekly collection of matter from the middens. Alderman Avery spoke at length on the absolute necessity of the system recommended by the committee for the health of the town; for securing a pure supply of water in the surface wells which furnished drinking water to a great part of the population; and with the view of overcoming the sewage difficulty. The proposal of the Sewage Committee was opposed on the ground that the corporation did not possess the power to interfere with the midden system. After a long discussion, the consideration of the matter was adjourned.

Register of New Patents.

APPLICATIONS FOR LETTERS PATENT.

3863.—SIMON, L. and R., Nottingham, "A new or improved method of applying petroleum products to illuminating purposes and apparatus belonging thereto." A communication. Dec. 20, 1872.

3866.—KENNELLY, T., Birmingham, gas-fitter, "Improvements in blow-pipes used in soldering and brazing metals, and for other purposes." Dec. 20, 1872.

3880.—SYMINGTON, R. S., Glasgow, telegraph engineer, "Improvements in applying gas for heating purposes, and in apparatus connected therewith." Dec. 21, 1872.

3882.—FERRDAY, W. W., 5, Falmouth Road, Dover Road, Surrey, C.E., "Improvements in treating human excreta, and in apparatus for working the excreta and converting the same into a dry and highly concentrated manure." Dec. 21, 1872.

3895.—CONNIFF, P., Kidwelly, Carmarthen, fire-brick maker, "Improvements in the manufacture of fire-bricks." Dec. 23, 1872.

3897.—MANN, W., gas-works, Dorset Street, in the City of London, gas engineer, "Improvements in machinery and apparatus for charging and discharging gas-retorts." Dec. 24, 1872.

3905.—RADFORD, J., Central Brass-Works, Thornton Road, Bradford, Yorkshire, "Improvements in steam, gas, water, or fluid taps." Dec. 24, 1872.

3919.—WILLIAMS, T., Rose Villa, Croft Street, Roath, near Cardiff, brick manufacturer, "Improved combinations of materials for the manufacture of fire-bricks, retorts, and crucibles, linings for furnaces, cupolas, and vessels in which great heat is employed." Dec. 26, 1872.

GRANTS OF PROVISIONAL PROTECTION.

2181.—ROBEY, J., Manchester, sugar refiner, "Improvements in the manufacture of a substitute for animal charcoal, to be used for purifying sewage and various other substances." July 20, 1872.

2966.—TREMAUX, J. M., Alger, and 37, Boulevard Bonne Nouvelle, Paris, "Certain improved processes of obtaining water, of storing it in the earth, and of regulating irregular sources of supply." Oct, 8, 1872.

3795.—EDWARDS, W., 43, Hungerford Road, Holloway, "Improvements in rotary pumps." Dec. 14, 1872.

3796.—SHANKS, J., Barrhead, Renfrew, N.B., sanitary engineer, "Improvements in water-supply apparatus for water-closets, urinals, and washing and similar apparatus." Dec. 14, 1872.

3808.—BAILEY, W. H., and GRINDROD, J., Salford, "Improvements in apparatus for raising, forcing, and measuring liquids." Dec. 16, 1872.

3822.—KINSEY, J., Leith, engineer, "Improvements in liquid-meters." Dec. 17, 1872.

3824.—PRINCE, A., 4, Trafalgar Square, Charing Cross, "Improvements in hydro-oxygen gas-burners." A communication. Dec. 17, 1872.

NOTICES TO PROCEED.

2453.—EMMENS, S. E., 3, Old Jewry, London, scientific referee, "Improvements in apparatus for producing heat and light." Aug. 16, 1872.

2460.—LAKE, W. R., Southampton Buildings, London, patent agent, "Improved apparatus for automatically igniting gas." A communication. Aug. 19, 1872.

2538.—SCOTT, H. Y. D., Ealing, Middlesex, major-general, C.B., "Improvements in the treatment of sewage, and in the preparation of manures therefrom." Aug. 26, 1872.

3502.—HOWLAND, T. A., and M'KNIGHT, C. G., Providence, Rhode Island, U.S.A., and 8, Southampton Buildings, London, "Improvements in the manufacture of gas and in apparatus therefor." Nov. 22, 1872.

3534.—THORNELOE, G., 34, London Wall, gas engineer, "An improved dip-pipe, forming part of gas apparatus for use in making gas." Nov. 25, 1872.

PATENTS WHICH HAVE PASSED THE GREAT SEAL.

1953.—GIROUD, H., Paris, merchant, "A new and improved rheometric regulator for gas-burners." June 28, 1872.

1990.—KING, H. J. H., Glasgow, engineer, "Improvements in apparatus for obtaining motive power for pumping or for measuring fluids." July 2, 1872.

2393.—BARTON, S., Cannon Street, London, "Improvements in apparatus for protecting the face and head and permitting respiration in places where the atmosphere is charged with noxious gases or vapours, smoke, or other impurities." Aug. 10, 1872.

2510.—VINCENT, W., Arborfield, Berks, machinist "Improvements in apparatus for manufacturing gas." Aug. 23, 1872.

2576.—SPENCER, G., C.E., 77, Cannon Street, London, "Improvements in the purification of coal gas used for illuminating purposes and for mechanical purposes, and in apparatus therefor." A communication. Aug. 30, 1872.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

3618.—HOMERSHAM, W. C., "Improvements in pipes and conduits, and in the joints thereof." Dec. 15, 1869.

3619.—PURDY, N. P., "An improved double or single acting pump." Dec. 15, 1869.

Share List of Provincial Gas Companies.

(Directors and Managers of Gas-Works are earnestly requested to enable us to rectify any errors and fill up the omissions in the following List.)

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£	**ENGLAND.**	£ s d	£ s d	£ s d
1200	5	Aberdare	5 0 0	10 0 0	6 10 0
		Aberdare & Aberaman			
		Aberdovey			
400	5	Abergele (Lim.)	5 0 0	4 0 0	5 0 0
		Abertillery G. & W.			
400	10	Abersychan (Lim.)	2 10 0	10 0 0	
		Aberystwith			
800	12½	Abingdon	12 10 0	8 0 0	16 0 0
1050	10	*Accrington G. & W.*	10 0 0	& Bns.	15 0 0
1050	10	Do., new shares	10 0 0		15 0 0
2100	5	Do., do.	5 0 0		7 10 0
2100	5	Do., do.	1 0 0		1 10 0
2100	2½	Do., do.	0 10 0		0 15 0
15120	5	*Airdale* (Limited)	5 0 0	10 0 0	10½—11
11760	5	Do.	1 0 0	10 0 0	3 5 0
24	75	Alcester	75 0 0	4 0 0	80 0 0
128	10	Aldborough (Lim.)	10 0 0	5 0 0	
269	10	Alderney	10 0 0	5 0 0	11 0 0
2500	10	*Aldershot G. & W.*	7 10 0	7 0 0	7 10 0
	2	Aldridge (Limited)			
		Aldrington, B., & H.			
300	6	Alfreton	6 0 0	5 0 0	5 10 0
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	10 0 0	12 0 0
1600	5	*Altrincham*	5 0 0	6 0 0	6 0 0
		Ambleside District, Amersham [£8000			
		Amlwich (Limited)			
170	10	Ampthill	10 0 0	7 0 0	13—13½
600	10	Andover	10 0 0	6 0 0	12 10 0
		Annfield Plain (Lim.)			
358	5	Appleby	5 0 0	2 10 0	2 15 0
	5	Arlesey (Limited)			
260	10½	Arundel	10 10 0	7 10 0	
250	10	Ashbourne, Derby	10 0 0	6 0 0	13 10 0
292	5	Ashburton	5 0 0	5 0 0	
84	30	Ashby-de-la-Zouch	30 0 0	6 0 0	
		Ashford & Bedfont (L.)			
700	10	Ashford (L.), Kent	10 0 0	6 0 0	11 10 0
1600	30	*Ashton-und-Lyne*	30 0 0	10 0 0	60 0 0
		Aspatria			
590	5	Atherstone	5 0 0	9 0 0	8 10 0
		Attleborough			
		Axbridge (Limited)			
		Axminster			
900	12	Aylesbury	10 0 0	7 10 0	14 10 0
150	10	Aylsham (L.), Norfk.	10 0 0	5 0 0	12 10 0
				& Bns.	
3093	10	*Bacup (Rossendale Union)* ordinary	10 0 0	10 0 0	16 0 0
600	10	Do., preference	10 0 0	10 0 0	16 0 0
2597	10	Do., new issue	6 0 0	10 0 0	11 0 0
1503	10	Do., 2nd new issue	8 0 0	7 0 0	10 0 0
300	5	Bakewell	5 0 0	8 0 0	8 0 0
200	10	Baldock	10 0 0	7 10 0	
1000	10	*Banbury* (Limited)	10 0 0	8 10 0	15 15 0
500	10	Do., new shares	7 10 0	7 0 0	10 10 0
2650	10	*Bangor Gas & Water*	10 0 0	8 0 0	14 0 0
		Barking			
		Barmouth (L) £1500			
260	10	Barnard Castle	10 0 0	5 10 0	10 15 0
5000	10	*Barnet District Gas & Water*	10 0 0	6 0 0	11 10 0
1000	5	Do.	5 0 0	5 0 0	5 10 0
	10	Do.	5 0 0	5 0 0	10 0 0
		Barnsley		7 10 0	
109	20	Barnstaple	20 0 0	7 10 0	
109	20	Barnstaple (Lim.)	20 0 0	& Bns.	
1158	2	Barton-on-Humber	2 0 0	5 0 0	2 0 0
120	25	Basingstoke	25 0 0	8 0 0	35 0 0
120	10	Do.	10 0 0	8 0 0	14 0 0
		Baslow (Derby)			
2500	16	*Bath*, A shares	16 0 0	8 0 0	41 0 0
2500	8	Do., B shares	8 0 0	7 0 0	
2500	10	Do., C shares	10 0 0	7 0 0	16 0 0
5000	10	Do., D shares	7 0 0	7 0 0	6 2 0
		Battle £2000		6 0 0	
56	26½	Bawtry	26 12 6	6 0 0	25 0 0
300	5	Beaconsfield (L.)	5 0 0	4 10 0	05 0 0
	5	Beaminster (Limited)			
710	10	*Beccles Gas & Water*	10 0 0	2 10 0	
		Bedale, Yorkshire			
300	30	*Bedford*	25 0 0	4 0 0	20 0 0
390	10	Bedworth	10 0 0	5 0 0	10 0 0
300	3	Belford	3 0 0		1 10 0
400	10	Belper	10 0 0	10 0 0	20 0 0
	10	Bentham (Limited)			
		Berkhampstead			
1086	10	Berwick & Tweedmouth	10 0 0	10 0 0	18 0 0
120	20	Bewdley	16 0 0	5 0 0	16 0 0
200	10	Bicester	10 0 0	5 10 0	11 0 0
800	10	Biddulph, Bradley G., & Black Bull	5 0 0	5 0 0	5 0 0
500	10	Bideford	10 0 0	6 0 0	11 0 0
90	10	Do.	5 0 0		
		Biggleswade			
		Billericay			
200	10	Billingboro' & Hor.	10 0 0	8 10 0	12 10 0
6000	5	*Bilston*	5 0 0	8 0 0	6 6 0
200	10	Bingham	10 0 0	4 0 0	
		Birchington (Lim.)			
		Birkdale (Limited)			
1200	80	*Birmingham*, A sh.	80 0 0	3 0 0	115 0 0
400	8	Do., B shares	8 0 0	5 0 0	11 15 0
5020	40	Do., new shares	40 0 0	5 0 0	49 0 0
2400	50	*Birmingham & Staffordshire*	50 0 0	10 0 0	101 10 0
2400	25	Do., new shares	25 0 0	10 0 0	50 15 0
7020	20	Do., do.	20 0 0	10 0 0	40 10 0
12500	28	Do., do.	20 0 0	7 10 0	30 5 0
250	16	*Birstall*	12 0 0	12*s.* 6*d.* per sh.	12 0 0
		Bishop's Auckland			
180	10	Bishop's Castle	10 0 0	5 0 0	10 0 0
230	10	Bishop's Stortford	10 0 0	5 0 0	10 0 0
		Bishop's Walthm (L)			
6000	15	*Blackburn*, A shares	15 0 0	10 0 0	29 10 0
6000	15	Do., B shares	14 0 0	7 10 0	19 0 0
772	5	Blaenavon (L) £4000	5 0 0	7 10 0	6 0 0
470	5	Blaenavon Gas & W	5 0 0	9 0 0	5 10 0
348	5	Do.	3 0 0		
		Blandford			
		Blanean Festiniog (L.)			
		Blyth & Cowpen			
		Bodmin			
800	5	Bodmin Consumers	4 0 0	6 0 0	4 10 0
844	5	Bognor	5 0 0	4 11 8	
844	5	Do.	2 0 0	4 7 6	
100	10	Bolsover	10 0 0		10 0 0
		Boroughbridge (L)			
2000	10	*Boston*	10 0 0	8 10 0	18 0 0
1500	10	Do.	10 0 0	7 0 0	14 0 0
	5	Boston Spa (Lim.)	5 0 0	6 10 0	5 10 0
		Botesdale (L.), Suff.			
	5	Bottesford (L) £1500			
200	5	Boughton Blean	5 0 0	5 0 0	5 0 0
193	10	Bourn	10 0 0	5 0 0	
		Bournemouth G. & W.			
350	10	Box Moor, Two Waters & Crouchfield (L.)	10 0 0	5 10 0	10 10 0
160	10	Brackley	10 0 0	6 0 0	10 0 0
		Bracknell (Lim.)			
		Bradford, Wilts			
		Bradley (Limited)			
		Braintree			
	67	Bramham Consumers (Limited)			
		Brampton, Cumber.			
		Brandon, Suffolk			
600	10	*Brecon* (Limited)	10 0 0	10 0 0	20 0 0
129700	Sk.	*Brentford*	All.	8 0 0	110—115
5000	20	Do., A shares	13 0 0	8 0 0	15 0 0
2500	20	Do., preference	20 0 0	5 0 0	20 0 0
		Brentwood			
		Bridge, near Canter.			
1100	10	*Bridge-end Gas & Water*	10 0 0	5 0 0	10 0 0
1400	5	Bridgenorth (L.)	5 0 0	10 0 0	10½—10½
200	60	*Bridgwater*	60 0 0	7 10 0	90 0 0
866	10	Bridlington (L)	10 0 0	10 0 0	18 5 0
520	10	Do.	2 10 0	10 0 0	7 10 0
450	10	Bridport	10 0 0	8 10 0	13 0 0
450	10	Do., new shares	7 0 0	8 10 0	9 0 0
6000	5	*Brierly Hill*	5 0 0	4 0 0	10¼—11
		Brigg			
		Brightlingsea (L.)			
3375	20	*Brighton*	20 0 0	10 0 0	32—33
675	20	Do., new shares	4 0 0	7 0 0	8½—9½
5000	20	*Brighton & Hove*	20 0 0	7 0 0	30—32
1250	20	Do., new shares	20 0 0	7 0 0	23¾—24½
2500	20	Do.	20 0 0	6 0 0	23¾—24¼
		Brimscombe (L.)			
261250	Sk.	*Bristol United*	Stock.	10 0 0	188—190
300	5	*Briton-ferry*	5 0 0		
150	8	Brixham	8 0 0	5 0 0	
		Broadstairs			
2000	10	*Bromley*, Kent	10 0 0	10 0 0	16 0 0
3000	10	Do., new shares	5 0 0	10 0 0	8 0 0
7000	1	Bromsgrove	1 0 0	5 0 0	1 2 0
100	10	Bromyard (Lim.)	10 0 0		
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8—9
		Brymbo			
		Brynmawr			
100	25	Buckingham	25 0 0	6 0 0	26 0 0
		Buckpool (Limited)			
		Buntingford (Lim.)			
	5	Burgess Hill & St. John's (L.) £5000			
500	1	Burley-in-Wharfdle. (Limited)	1 0 0	5 0 0	1 1 0
		Burnham, Bucks			
		Burnham (L.) Essex			
		Burnham, Somers.			
1600	5	*Burslem & Tuns*	5 0 0	10 0 0	9 5 0
3000	5	Do., new shares	5 0 0	7 10 0	7 2 6
1600	5	Do., do.	5 0 0	7 0 0	6 10 0
440	2½	Burton, Westmoreland (Limited)	2 10 0		
1260	10	*Bury St. Edmund's*	10 0 0	10 0 0	19 10 0
1800	10	Do., new shares	4 0 0	7 10 0	6 10 0
500	5	Caerleon (Lim.)	4 0 0		
	5	Caerphilly Gas & Water (Limited)			
150	10	Caistor	10 0 0	7 0 0	12 0 0
187	5	Callington	5 0 0		5 0 0
300	10	Calne, Wilts	10 0 0	8 0 0	14 0 0
		Calverley (L.) *York.*			
		Camborne			
600	50	*Cambridge*	50 0 0	10 0 0	95—97
160	12½	Do., new shares	12 10 0	10 0	22 10 0
640	8½	Do., do.	4 0 0	10 0 0	6 0 0
		Campden			
300	50	Cansfield	50 0 0	10 0 0	92 0 0
22500	Sk.	*Canterbury G. & W.*	50 0 0	6 0 0	10 0 0
4000	10	Do.	10 0 0		
800	25	*Cardiff*, A shares	25 0 0	10 0 0	50 0 0
1600	25	Do., B shares	25 0 0	8 0 0	40 0 0
543	25	Do.	12 10 0	7 0 0	25 0 0
		Cardigan (Limited)			
160	25	Carmarthen	25 0 0	5 0 0	30 0 0
	10	*Carmarthen* (Lim.)			
		Carnarvon			
	5	Carnforth (Limited)			
		Carshalton [£10000.			
200	6	Castlecary	6 0 0		5 0 0
200	10	Castle Donnington	10 0 0	6 0 0	12 14 0
249	5	Castleford	5 0 0	5 0 0	5 0 0
400	5	Castletown, I. of M.	5 0 0	6 10 0	7 0 0
409	5	Do.	5 0 0	5 10 0	5 10 0
	5	Caterham (Lim.)			
620	2	Cawood (Limited)	2 0 0	4 0 0	
329	5	Chard (Limited)	0 10 0		
	¼	Charing (L.) £1000			
		Chase Town (Lim.)			
720	5	Chatteris	5 0 0	7 10 0	5 15 0
300	10	Cheadle	10 0 0	6 0 0	12 10 0
200	50	Chelmsford	50 0 0	8 0 0	70 0 0
200	25	Do., new shares	25 0 0	8 0 0	35 0 0
25000	Sk.	*Cheltenham*, stock	16 0 0	10 0 0	
50000	Sk.	Do., stock	8 0 0	7 10 0	
		Do., new shares		7 0 0	
500	10	*Chepstow*, A shares			
200	10	Do., B shares			
600	5	*Chertsey Consumrs*	5 0 0	7 0 0	6 10 0
600	1½	Do.	1 10 0	7 0 0	1 15 0
600	2½	Do.	2 10 0	7 0 0	3 0 0
250	10	Do.	10 0 0	7 0 0	11 15 0
230	10	Chesham	10 0 0	5 0 0	10 10 0
30000	Sk.	*Chester United*	Stock.	10 0 0	172—174
30000	,,	Do., preference	,,	17 0 0	129—131
535	10	Do, new shares	10 0 0	7 0 0	14 0 0
250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0
11200	Sk.	*Chesterfield Gas & Water*	100 0 0	10 0 0	160 0 0
8000	Sk.	Do., guar. stock	100 0 0	5 0 0	108 0 0
400	50	Do., preference	50 0 0	5 0 0	53 0 0
2120	10	Do., do.	10 0 0	5 0 0	10 10 0
580	10	Do., ordinary	10 0 0	7 0 0	11 0 0
1700	10	Do., new	5 10 0	7 0 0	5 10 0
		Chesterton (L.)			
		Chichester			
		Chigwll. & Woodford Br. (L.) £10,000			
	5	Chilham Con. (L.)			
		Chippenham			
329	10	Chipping Nort. (L.)	10 0 0	5 0 0	
100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0
	5	Chipping Sodbury (L.)			
		Chowbent, Lanc.			
		Christchurch			
	5	Chudleigh (Lim.)			
200	5	Church Stretton (L.)	5 0 0		5 0 0
680	10	Cirencester	10 0 0	5 0 0	11 0 0
		Clay Cross		& Bns.	
	10	*Clayton, Allerton, & Thornton*	10 0 0		12½—13
		Clecthorpes			
550	10	*Clevedon* (L.)	10 0 0	7 0 0	11 10 0
		Clitheroe			
327	1	Cobham (Limited)	1 0 0		
1139	5	Cockermouth	5 0 0	6 0 0	6 10 0
600	5	Coggeshall	5 0 0	7 0 0	5 0 0
300	5	Do., preference	5 0 0	5 0 0	5 0 0
1000	20	*Colchester*	20 0 0	8 0 0	25 0 0
600	20	Do.	20 0 0	7 0 0	22 10 0
		Colcford, Gloucester			
		Coleshill (L.) £2000			
160	10	Collingham (Lim.)	10 0 0	5 0 0	10 0 0
		Collumpton			
328	5	Colnbrook, Middlsex	5 0 0	5 0 0	5 0 0
150	20	Colne, Lancashire	20 0 0		36 0 0
150	10	Do., ¼ shares	10 0 0		18 0 0
150	5	Do., ½ shares	5 0 0	£10	9 0 0
150	5	Do., A shares	5 0 0		9 0 0
150	5	Do., B shares	5 0 0		9 0 0
150	5	Do., C shares	2 0 0		5 0 0
2000	10	Colney Hatch	10 0 0	5 0 0	11 0 0
500	10	Do.	10 0 0	5 0 0	10 0 0
	5	Colyton (Limited)	2 10 0		
320	5	Conway (Limited)	5 0 0		5 0 0
		Corsham			
		Corwen			
1200	10	Cottenham			
1600	25	*Coventry*	25 0 0	6 0 0	31½—32½
800	25	Do., A shares	25 0 0	6 0 0	29½—30½
800	25	Do., B shares	12 10 0	6 0 0	12 12 6
400	5	Cowbridge	5 0 0	6 0 0	6 0 0
500	10	Cowes	10 0 0	5 0 0	
2000	10	*Cradley Heath*			
190	10	Cranbrooke, £1900	10 0 0	7 10 0	
		Crawley		4 10 0	
		Crayford & Bexley			
		Crays			
420		Crediton	5 0 0	5 0 0	6 0 0
350	10	Crewkerne	10 0 0	6 0 0	10 10 0
		Crickhowell G. & W.			
		Cricklade (L.) £1000			
200	10	Croft & Hurworth	9 0 0		
1200	1	Crook (Limited)	1 0 0	10 0 0	1 0 0
		Croston (Limited)			
251	5	Crowland	5 0 0	7 0 0	
181	10	Crowle, Lincoln	10 0 0	10 0 0	
4000	5	*Croydon Commercial*	5 0 0	10 0 0	
4000	5	Do.	5 0 0	10 0 0	8½—8¾
2320	5	Do.	5 0 0	10 0 0	
9770	5	Do.	5 0 0	7 0 0	6 —6½
5830	5	Do.	1 0 0	7 0 0	1¼—1½
		Cuckfield			
	10	Darenth Vale (L.)			
250	20	*Dartford*	20 0 0	7 0 0	27 0 0
700	5	Dartmouth (Lim.)	5 0 0	7 10 0	7 0 0
125	20	Daventry	20 0 0	5 0 0	24 8 0
165	10	Dawley	14 0 0	5 0 0	10 0 0
346	5	Dawlish	5 0 0	8 0 0	7 10 0
1400	10	*Deal & Walmer*	10 0 0	8 10 0	12 0 0
1400	1¼	Do.	1 5 0	4 0 0	1 0 0
350	10	Do.	5 0 0	7 0 0	6 5 0

No. of Shares issued.	Amount per share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
1200	1	Deddington	1 0 0		
		Dedham (L.) £1000			
		Delph, Yorkshire			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
1850	25	*Derby*	25 0 0	10 0 0	53 0 0
		Dereham			
7000	5	*Devonport*	5 0 0	10 0 0	9 10 0
3000	5	Do., preference	4 0 0	6 0 0	4 5 0
7400	5	*Dewsbury & Batley* A shares	5 0 0	10 0 0	10 5 0
7400	5	Do., B shares	5 0 0	7 10 0	7 12 6
7600	5	Do., C shares	3 15 0	7 10 0	6 2 6
		Dipton (Limited)			
		Diss			
400	5	Dolgelly	5 0 0		
400	2½	Do., new shares	2 10 0		
160	10	Donnington	10 0 0	5 0 0	10 0 0
340	27½	Dorchester	25 0 0	5 0 0	27 10 0
120	25	*Dorking*	24 0 0	5 0 0	25 0 0
		Donnington, Lincoln.			
629½	25	Douglas, I. of Man	25 0 0	5 2 9	44 12 6
21945	Sk.	*Dover*	100 0 0	6 10 0	125 0 0
2405	10	Do., new shares	10 0 0	6 10 0	12 10 0
500	10	Dowlais (Limited)	10 0 0		
500	4	Do.	4 0 0	7 0 0	
25	60	Downham Market	60 0 0	7 10 0	
	5	Downton (Limited) £2006			
		Driffield			
3000	5	*Drighlington & Gildersome*	5 0 0	7 10 0	7 15 0
584	10	Do.	3 0 0	7 0 0	
		Droitwich			
1100	20	*Droylsden*	10 0 0	8 0 0	15 0 0
900	30	*Dudley*	30 0 0	9 0 0	42—43
300	30	Do., pref. shares	30 0 0	5 0 0	28½—29½
800	10	Do., new shares	5 0 0	9 0 0	6¾—7¼
550	10	Duffield, Allistree, & Quorndon (Lim.)	10 0 0	6 0 0	
1500	13½	*Dukinfield*	18 0 0	4 0 0 0	37 12 6
1500	6¾			8 0 0	
200	10	Dunmow	10 0 0	5 0 0	10 0 0
		Dunstable			
900	10	Durham	10 0 0	10 0 0	£26
900	10	Do., new shares	5 10 0	10 0 0	
400	10	Dursley, Gloucester	10 0 0	5 10 0	
150	5	Easingwold	5 0 0	5 0 0	
2000	10	*Eastbourne*	10 0 0	10 0 0	15 0 0
90	20	East Dereham	20 0 0	5 0 0	21 0 0
356	5	East Grinstead	5 0 0	6 0 0	5 0 0
		Easton (Limited)		5 0 0	
1200	5	East Retford	5 0 0	10 0 0	7 10 0
2410	5	*Eccleshill & Bolton*	5 0 0		
1190	5	Do.	1 0 0		
		Eckington & Mosboro' (Limited)			
	10	Edenbridge (L.) £2000			
		Edgware			
		Egremont, Cumber.			
1801	10	*Elland*	10 0 0	10 0 0	20 0 0
699	10	Do., preference	10 0 0	2 0 0	4 0 0
300	10	Do., preference	10 0 0	5 0 0	10 0 0
800	5	Elsecar (Limited)	5 0 0	5 0 0	5 12 0
		Eltham			
		Ely (Limited)			
200	10	Emsworth			
400	5	*Enfield*	5 0 0	5 0 0	5 0 0
		Epping (Limited)			
300	19	Epsom & Ewell	19 0 0		
		Erith			
350	15	*Eton*, A shares	15 0 0	10 0 0	16 10 0
36	15	Do., B shares	15 0 0	7 0 0	
700	10	Evesham (Limited)	10 0 0	7 0 0	11—12
1600	25	*Exeter*	25 0 0	8 0 0	40—42
250	10	*Exmouth*	10 0 0	5 0 0	10 0 0
58	25	Eye	25 0 0	5 0 0	25 0 0
170	10	Fairford [£3500	10 0 0	3 0 0	
		Fakenham (Limited)			
		Falkingham			
10765	1	Falmouth (Limited)	1 0 0	5 0 0	1 0 0
6955	Sk.	*Fareham*	100 0 0	6 0 0	110 0 0
256	25	Farnham	25 0 0	7 0 0	35 0 0
		Farnworth & Kears.			
		Farringdon			
140	50	Faversham	50 0 0	10 0 0	66 0 0
		Fazeley (L.) £3000			
120	10	Fenny Stratford (Limited)	10 0 0	5 0 0	11 0 0
	5	Filey	5 0 0	5 0 0	5 0 0
	5	Finedon (L.) £2000			
		Fleetwood			
3960	10	*Folkestone*	10 0 0	10 0 0	17 17 0
340	5	Framlingham	5 0 0	6 0 0	5 15 0
2000	1	Frodsham (Limited)	1 0 0	7 10 0	1 1 0
480	25	*Frome*	25 0 0	10 0 0	35 0 0
		Furness Gas & W.			
12000	Sk.	*Gainsborough*	All.	6 13 4	130 0 0
400	20	Do., new shares	10 0 0	6 13 4	13½—14
170	10	Gillingham (Limited) Dorset	10 0 0	3 0 0	
103	25	Glastonbury	25 0 0	4 0 0	15 0 0
600	10	*Glossop*	10 0 0	7 10 0	15 0 0
600	5	Do.	5 0 0	7 10 0	7 10 0
1800	10	Do., new shares	9 0 0	7 10 0	13 0 0
1000	25	*Gloucester*, A shares	25 0 0	10 0 0	42 0 0
856	25	Do., B shares	15 0	7 10 0	28 0 0
260	20	Godalming	20 0 0	5 0 0	20 0 0
300	5	Do., new shares	25 0 0	5 0 0	5 0 0
100	20	Do., do.	18 0 0		
100	5	Do., do.	2 0 0		
	5	Golborne (L.) £5000			
621	5	*Gomersal*	5 0 0	6 0 0	6 7 6
		Gorleston & Strathdn.			
855	25	*Gosport*	25 0 0	8 0 0	36 4 0
	5	Goudhurst (Limited)			
		Grange & Cartmel District			
2500	10	Grantham	10 0 0	6 0 0	15 10 0
1000	20	*Gravesend*	20 0 0	5 0 0	21 0 0
		Grays Thurrock			
643	5	Gt. Berkhampstead	15 0 0	6 0 0	5 10 0
1000	10	*Great Grimsby*	10 0 0	10 0 0	20 0 0
1000	6¾	Do., new shares	6 10 0	10 0 0	13 0 0
1627	10	Do., do.	10 0 0	7 0 0	14 0 0
700	5	Great Harwood	5 0 0	4 5 0	
280	5	Do., new shares	1 0 0		
210	10	Great Marlow	10 0 0	5 0 0	10 0 0
		Great Stanmore			
		Great Torrington			
450	5	Great Wigston	5 0 0	6 0 0	
150	1	Do., new shares	1 0 0	6 0 0	
	5	Greenhithe (Limited)			
	5	Grigley-on-the-Hill (Limited)			
1300	20	Guernsey	14 0 0		23 0 0
352	25	*Guildford*, A shares	25 0 0		
352	3	Do., B shares	3 0 0		
		Do., new shares			
25	200	Guisborough	115 0 0	8 0 0	
	44/5	Haddenham (Limited)			
		Hadleigh Cons. (L.)			
240	5	Hadlow (Limited)	5 0 0		
140	10	Hailsham	10 0 0	6 0 0	10 0 0
40	50	Halesowen	50 0 0	6 0 0	
300	5	Halesworth	5 0 0	7 10 0	6 5 0
240	5	Haltwhistle (Lim.)	5 0 0	4 10 0	5 0 0
		Hampton Court			
500	10	Hanley (Limited)	10 0 0	5 0 0	10 0 0
500	5	Harrington	4 0 0	8 0 0	
13333½	Sk.	*Harrogate*, A stock		9 10 0	180 0 0
9000	Sk.	Do., B stock		7 10 0	145 0 0
900	10	Do., new shares	10 0 0	7 10 0	14 0 0
6809	5	*Hartlepool Gas and Water*	5 0 0	7 10 0	7 0 0
13200	5	Do., new shares	5 0 0	7 10 0	7 0 0
6597	5	Do., do.	5 0 0	7 0 0	6 12 6
8750	5	Do., do.	1 0 0	7 0 0	1 12 6
1000	1	Hartley Wintney	1 0 0	2 10 0	21s—23s
		Harwich			
300	5	Haslemere			
662	6	*Haslingden*	6 0 0	10 0 0	10 0 0
343	6	Do., A shares	4 0 0	10 0 0	6 0 0
1650	25	*Hastings & St. Leonards*	25 0 0	8 0 0	41 10 0
1500	20	Do.	20 0 0	7 0 0	27 0 0
	1	Haswell Gas & Water (Limited)			
180	10	Hatfield			
	5	Hatherligh (L.) £2000			
		Harlow & Sawbridgeworth			
500	5	Havant	5 0 0	3 0 0	5 0 0
120	10	Haverhill	10 0 0	5 0 0	10 0 0
840	5	Hawick	5 0 0	10 0 0	10 0 0
	5	Hawkhurst (Limited)			
		Hay (L.), Brecon			
		Haydon Bridge			
8500	Sk.	*Hebden Bridge*	Stock	10 0 0	200 0 0
250	10	Do.	10 0 0	7 0 0	12 16 0
170	10	Heckington (Lim.)	10 0 0		10 0 0
		Heckmondwike			
120	10	Hedon (Limited)	10 0 0	3 0 0	
145	12	Helston	12 0 0	9 0 0	
250	10	Hemel Hempstead	10 0 0	4 0 0	7 0 0
500	10	Henley (Limited)	10 0 0	5 10 0	10 5 0
300	10	Herne Bay	10 0 0	6 0 0	11 0 0
1300	10	*Hertford*	8 0 0	7 10 0	12 0 0
		Hessle (L.) £1500			
270	10	Hexham	10 0 0	8 0 0	15 0 0
160	10	Higham Ferrers	10 0 0	7 0 0	12 0 0
	5	Highbridge (Lim.)			
		Highworth, Wilts.			
1480	5	High Wycombe	5 0 0	6 0 0	7 10 0
2000	5	Hinckley (Limited)	5 0 0		
200	20	Hitchin	20 0 0	8 0 0	
200	5	Do., new shares	5 0 0	8 0 0	
880	5	Hoddesden	5 0 0	7 0 0	6 0 0
	5	Hogsthorpe (L) £1000			
		Holbeach [£2000			
	5	Hollingbourne (Lim.)			
600	20	*Holmfirth*	19 0 0	6 10 0	21 10 0
		Holt (Limited)			
1315	5	Holyhead	5 0 0	7 10 0	9 0 0
		Holywell (*see* Brit. Prov.)			
98	25	Honiton	25 0 0	3 12 0	20 0 0
1250	1	Honley (Limited)	1 0 0	5 0 0	1 0 0
6	500	Horncastle	£500		
	5	Hornchurch (Lim.)			
		Hornsey (Limited)			
1200	2½	Horsforth	2 10 0		2 10 0
303	20	Horsham	20 0 0	10 0 0	30—32
	10	Houghton-le-Spring	10 0 0	8 10 0	27—30
		Howden			
320	5	Hucknall, &c. (Lim.)			
1700	20	*Huddersfield*	20 0 0	10 0 0	37 5 0
250	20	Do., new shares	15 0 0	10 0 0	
		Hull			
		Hull-Sculcoates (*see* Brit. Provincial)			
210	10	Hungerford	10 0 0	5 0 0	10 0 0
1200	10	*Huntingdon*	10 0 0	7 10 0	15 10 0
		Hunstanton (Lim.)			
250	10	Hunton Bg. & Abbot's Langley (Lim.)	10 0 0		
		Hurstpierpoint			
600	10	*Huyton & Roby*	10 0 0	5 0 0	12 10 0
300	10	Do., new shares	9 0 0	5 0 0	11 10 0
2500	10	*Hyde*	10 0 0	10 0 0 &£4arr	18 0 0
1100	10	Do.	6 6 0	7 10 0	10 1 0
	5	Hythe (L.) £2000			
706	10	*Hythe & Sandgate*	10 0 0	5 0 0	10 0 0
		Idle & Eccleshill (*see* Airdale)			
		Ilford			
198	12	*Ilfracombe*	2 0 0	4 0 0	8—9
560	6¼	Ilkestone	6 5 0	11 4 0	8 0 0
	10	*Ilkley*	10 0 0		13—15
	10	Do.	2 0 0		3—4
		Ilminster			
250	5	Ingatestone (Limited)	5 0 0	1 10 0	
2800	10	*Ipswich*	10 0 0	10 0 0	18 5 0
1800	10	Do.	10 0 0	7 10 0	14 2 6
200	10	Do.	5 0 0		
		Ironbridge			
180	10	Irthlingborough	10 0 0	7 0 0	10 0 0
800	30	*Isle of Thanet* (Margate & Rams.)	30 0 0	10 0 0	45—50
		Jersey, St. Helier's			
		Kegworth			
363	5	Kelvedon (Limited)	5 0 0		
2240	10	*Kendal United Gas & Water*	10 0 0	10 0 0	21 0 0
380	20	Do., preference	20 0 0	7 10 0	33 0 0
290	10	Kenilworth (Limited)	10 0 0	4 0 0	10 0 0
400	5	Keswick	5 0 0	6 0 0	4 0 0
228	25	Kettering	25 0 0	5 0 0	30 0 0
		Ketton (L.) Rutland		7 0 0	
	5	Keymer & Ditchling (Limited)			
		Keynsham			
500	5	Kibworth	5 0 0	6 0 0	7 0 0
		Kidderminster		5 0 0	
924	10	*Kidsgrove*	10 0 0	10 0 0	8 0 0
150	10	Kimbolton	10 0 0	7 0 0	12 0 0
140	7	Kingsbridge	7 0 0	7 10 0	11 0 0
		Kingsclare			
270	5	King's Cliffe	5 0 0	5 10 0	5 0 0
3200	10	*King's Lynn*	10 0 0	7 10 0	12—13
		Kingston-on-Thames.			
		Kingswinford District (Limited)			
		Kington, Hereford			
400	5	Kinver, Staffordshire	5 0 0		5 0 0
	1	Kippax (Limited)			
		Kirby Lonsdale			
		Kirkburton			
400	5	Kirkby Stephen (L.)	5 0 0		
330	5	Kirkham, Lancash.	2 0 0	4 0 0	5 0 0
330	2½	Do., new shares	2 10 0	4 0 0	2 10 0
	5	Kirkhampton, Dalton, & Lepton (Lim.) £5006			
200	10	Kirton-in-Lindsey	10 0 0	5 0 0	10 10 0
200	5	Knighton (L.)	5 0 0		
1000	10	*Knottingley*			
1600	5	Knutsford Gas & W. (Limited)	5 0 0	6 0 0	5 10 0
	5	Lamborne (L.) £1200			
		Lampeter, Llandsul., Tregaron and Aberayron			
30000	Sk.	*Lancaster*	All.	10 0 0	205—207
	5	Langley Mill & Heanor (Limited)			
30	25	Langport	5 0 0	4 0 0	15 0 0
		Launceston			
		Lea Bridge (*see* County & General)			
1500	20	*Leamington Priors*	20 0 0	10 0 0 & Bns.	30—32
1500	20	Do., new shares	11 0 0	7 0 0	13—15
213	10	Leatherhead	10 0 0	5 0 0	10 0 0
		Ledbury			
		Leeswood (Limited)			
3900	13	*Leicester*	13 0 0	10 0 0	23 0 0
5000	10	Do., new shares	10 0 0	7 10 0	15 0 0
		Leigh £2000		7 0 0	
476½	21	Leighton Buzzard	21 0 0	8 0 0	30 0 0
500	10	Leominster	10 0 0	7 0 0	12 0 0
330	25	Lewes, A shares	25 0 0	8 0 0	31 5 0
644	5	Do., B shares	5 0 0		6 5 0
245	5	Leyburn, Yorkshire	5 0 0		6 0 0
		Leyland, Lancashire			
250	20	Lichfield	20 0 0	10 0 0	40 0 0
320	25	*Lincoln*	25 0 0	10 0 0	70 0 0
300	5	Lindfield (Limited)	5 0 0	8 0 0	5 0 0
240	5	Liskeard	5 0 0	7 10 0	6 0 0
		Littleborough			
240	5	Littlehampton	5 0 0	10 0 0	5 0 0
	5	Littleport (L.) £2000			
	Sk.	*Liverpool United*	£100	10 0 0	208 0 0
	25	Do.	5 0 0	7 0 0	5 12 6
	10	Llanberis (Limited)			
259	5	Llandovery (Limited)	1 10 0	7 0 0	
1500	10	Llandudno Gas & W. (Limited)	10 0 0	7 0 0	12 0 0
		Llanelly £3000			
		Llanfyllin (L.) £2000			
		Llangollen			
250	10	Llanrwerst (Limited)	9 15 0	5 0 0	9 15 0
	5	Llantrissant (L.) £2000			
	10	*Llynvi Valley*			
272	5	Loddon	5 0 0	3 0 0	5 0 0
		Long Buckby (Lim.)			
	5	Longsdg. (L. £10,000			
120	10	Long Sutton (Lim.)	10 0 0	7 10 0	11—12
2000	10	*Longton*	10 0 0	6 0 0	14 0 0
1000	10	Do., new shares	2 0 0	6 0 0	2 5 0
		Longwood, near Huddersfield			
250	5	Lostwithiel	5 0 0	4 0 0	6 0 0
250	1	Do., new shares	1 0 0	5 0 0	1 10 0
1422	6	*Loughborough*	6 0 0	10 0 0	11 15 0
240	25	*Louth*	25 0 0	10 0 0	47 0 0
2500	10	*Lowestoft Gas & W.*			
611	5	Ludlow Union	5 0 0	5 0 0	5 0 0
250	5	Do., pref. shares	5 0 0	5 0 0	
640	10	*Luton*	10 0 0	7 10 0 & Bns.	12 0 0
640	5	Do., preferential	5 0 0	4 0 0	5 0 0
640	5	Do., new shares	5 0 0	7 10 0 & Bns.	6 0 0
100	20	Lutter (Lim.) £2000	20 0 0	6 5 0	25 0 0
	5	Lydd (L.) £3000			
		Lydney			
63	20	Lyme R.	20 0 0	4 0 0	20 0 0
120	25	Lymington	25 0 0	5 0 0	25 0 0
300	10	Maidenhead	10 0 0	5 0 0	10 0 0
500	25	*Maidstone*, A shares	25 0 0	10 0 0	51—52
500	25	Do., B shares	25 0 0	4 0 0	23—24
	25	Do., new shares	25 0 0	7 10 0	30—40
204	23	Maldon	23 0 0	7 0 0	27 0 0
200	10	Malmesbury	10 0 0	2 10 0	5 15 0
		Malpas (Limited)			
825	10	Malton	10 0 0	8 0 0	15 10 0
793	7	Do.	7 0 0	8 0 0	10 10 0
		Malvern Link			
		Manningtree			
300	50	*Mansfield*	50 0 0	10 0 0	100 0 0
150	10	Mansfield Woodhouse	10 0 0		

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		March			
		Margate (*see* Isle of Thanet)			
	10	Market Deeping (L.)			
		Market Drayton			
132	25	Market Harborough	25 0 0	7 0 0	35 0 0
		Market Weighton			
		Markyate Street (L.)			
		Marlborough			
150	10	Marsden (Limited)	10 0 0	5 0 0	10 0 0
	5	Marlock (L.) £2000			
9394	Sk.	*Maryport Town & Harbour*	100 0 0	5 0 0	
59	10	Do.	10 0 0	5 0 0	
600	5	Matlock (Limited)	5 0 0	6 0 0	
508	5	Matlock Bridge, Matlock Bank, & Matlock Town (Limited)	5 0 0	6 0 0	
200	2	Measham (Limited)	1 12 6	5 0 0	
220	10	Melbourne	10 0 0	6 0 0	12 0 0
		Melksham			
934	2	Meltham	2 0 0	4 10 0	
220	20	Melton Mowbray (L.)	20 0 0		
1950	1	Menai Bridge	1 0 0		0 17 6
50	10	Mere	10 0 0		
330	35	*Merthyr Tydvil*	35 0 0	10 0 0	50 0 0
330	20	Do.	20 0 0		12 0 0
3300	Sk.	Do., preference	All.	5 0 0	100 0 0
120	10	Middleham	1 0 0	5 0 0	10 0 0
		Middleton-in-Teesdale			
		Middleton & Dinsdale (L.)			
400	5	Midhurst (Limited)	5 0 0	2 10 0	5 0 0
	5	Midsomer Nor. (L.)			
198	5	Mildenhall	5 0 0	5 0 0	
513	10	*Milnrow* (Limited)	10 0 0	5 0 0	
300	5	Milnthorpe (L.) £1500	4 10 0	3 6 8	
184	10	Milverton (Limited)	10 0 0	5 0 0	10 0 0
2000	5	*Mirfield*	5 0 0	5 0 0	6 5 0
3033	10	*Mitcham & Wimble*	10 0 0		
3033	10	Do., new shares	3 0 0		
		Mold Green (Lim.)			
650	5	*Mold Gas & Water*	5 0 0	7 10 0	6½—6¾
700	10	Monmouth Gas & W.	10 0 0	5 0 0	10 0 0
250	5	Montgomery (Lim.)	5 0 0		
300	5	Morecambe (Limited)	5 0 0	5 0 0	6 0 0
	5	Morestonhampstead (Limited)			
150	10	Moreton-in-Marsh	9 2 6	4 0 0	9 2 6
1000	5	*Morley*, near Leeds	5 0 0	10 0 0	8 10 0
1000	2	Do.	2 0 0	10 0 0	3 8 0
220		Morpeth	19 10 0	5 0 0	40 0 0
		Mossley			
		Mottram			
	30	Nantwich (Limited)			
	2	Narberth (L.) £2000			
		Nayland			
		Neath			
1600	10	*Neath New*	10 0 0	3 0 0	9 10 0
185	10	Needham Market	10 0 0	4 0 0	
		Netherthng (L.) £700			
		Newark		10 0 0	
		Newburn			
250	20	Newbury	20 0 0	5 0 0	20 0 0
160000	100	*Newcastle & Gateshd.*			
		A shares	100 0 0	10 0 0	175 0 0
40000	100	Do., B shares	100 0 0	3 10 0	61 0 0
100000	100	Do., C shares	100 0 0	7 0 0	122 0 0
		Newcastle-und.-Lyne			
250	5	Newent	5 0 0		
		Newhaven, Sussex			
600	5	Newmarket	5 0 0	4 0 0	4 0 0
366	2	Do., preference	2 0 0	6 0 0	2 0 0
		New Mill (L.) £7000			
200	20	*New Mills & Hayfield*	20 0 0	7 10 0	
70	20	Newnham (Limited)	20 0 0	10 0 0	37 10 0
	5	Newport, Essex (L.), £2000			
		Newport, I. of Wight			
		Newport Pagnell			
360	35	*Newport*, Mon., A sh.	35 0 0	9 0 0	50 0 0
540	35	Do., B shares	35 0 0	7 10 0	42 10 0
		Newport, Salop			
250	5	New Romney (Lim.)	5 0 0	5 0 0	5 0 0
	20	Newton Abbott			
198	10	Newtown, Montgmy.	10 0 0	6 0 0	10 0 0
	5	Northallerton			
777	20	*Northampton*, A sh.	20 0 0	10 0 0	36 0 0
777	20	Do., B shares	20 0 0	4 0 0	14 0 0
777	20	Do., C shares	20 0 0	7 10 0	28 0 0
2331	5⅔	Do., D shares	5 13 4	7 10 0	7 10 0
1725	20	Do., E shares	7 0 0	7 0 0	9 0 0
	1	*North Bierley*	1 0 0		1¼—1⅜
		Northfleet (*see* C. & G.)			
		Northleach			
605	5	North Ormesby (L.)	5 0 0	6 0 0	
120	10½	North Walsham	10 10 0	5 0 0	10 15 0
371	15	Northwich	15 0 0	5 0 0	15 0 0
		Norwich (*see* Brit. P)			
4600	50	*Nottingham*	50 0 0	5 10 0	60 0 0
	50	Do., new shares	50 0 0	5 10 0	63 0 0
288	8	Nuneaton (Limited)	8 0 0	5 0 0	7 10 0
125	8	Do., new shares	8 0 0	5 0 0	7 10 0
1200	5	Oaken Gates, Salop	5 0 0	8 0 0	7 0 0
240	5	Oakhampton (Lim.)	5 0 0		
200	10	Odiham	10 0 0	6 0 0	10 10 0
140	5	Ogley Hay & Brownhills (Limited)			
320	5	Old Goole (Lim.)	5 0 0	6 0 0	5 0 0
		Olney			
360	10	*Ormskirk*, old shares	10 0 0	8 0 0	14 0 0
1080	10	Do., new shares	4 10 0	8 0 0	6 4 6
3000	5	*Ossett & Horbury*	5 0 0	10 0 0	11—11½
3000	5	Do., new shares	1 0 0	7 0 0	3 0 0
		Oswestry			
		Otley, Yorkshire			
80	25	Oundle	25 0 0	7 0 0	25 0 0
2400	15	*Over Darwen*	15 0 0	5 0 0	19 0 0
4200	15	Do., B shares	7 10 0	5 0 0	10 0 0
1694	1	Over & Wharton (L.)	1 0 0		1 2 0
320	5	Owston Ferry (L.)	5 0 0	5 0 0	5 0 0
720	25	*Oxford*	25 0 0	10 0 0	50 0 0
240	25	Do., B shares	25 0 0	5 0 0	25 0 0
600	20	Do.	20 0 0	7 0 0	26 0 0
1527	5	Padiham	5 0 0	6 0 0	6 0 0
438	2½	Painswick	2 10 0		2 10 0
		Pangbourne (L)			
		Pately Br., Yorkshire			
300	5	Peel, Isle of Man	5 0 0	7 0 0	6—7
		Pembroke Docks (L.)			
		Pembroke			
500	20	*Peniston*			
	5	Penkridge (Limited)			
250	20	Penrith	15 0 0	6 10 0	21 0 0
133	20	Penzance	20 0 0		15 0 0
		Pershore			
2000	10	*Peterborough*	10 0 0	9 0 0	16 10 0
750	10	Do.	10 0 0	7 0 0	13 10 0
320	5	Petersfield	5 0 0	5 0 0	
300	10	Petworth	10 0 0	7 10 0	16 0 0
1250	2	Pewsey (Limited)	2 0 0	6 0 0	2 0 0
		Pickering			
300	5	Pinxton (Limited)	5 0 0	10 0 0	9 0 0
2500	10	*Plymouth & Stnhouse*	10 0 0	10 0 0	19 0 0
2500	10	Do., new shares	10 0 0	7 10 0	14 0 0
2500	10	Do., new shares	3 0 0	7 10 0	4 10 0
160	10	Pocklington	10 0 0		5 0 0
		Ponder's End & Enfield Highway (L)			
		Pontefract			
		Pontypridd		4 0 0	
400	10	Poole	10 0 0	5 0 0	10 0 0
344	2	Do., new shares	2 0 0	5 0 0	2 0 0
	10	Porth Cawl (Limited)			
643	5	Port Madoc (Limited)	5 0 0	5 0 0	
		Port Talbot			
500	10	Portishead	10 0 0	3 0 0	10 0 0
250	10	Do., new shares	1 0 0		
600	53	*Portsea Island*	53 0 0	8 0 0	81—83
600	50	Do., new shares	50 0 0	8 0 0	57 0 0
600	50	Do., new shares	49 0 0	8 0 0	56 0 0
	Sk.	Do.		5 0 0	92 0 0
120	10	Potton, Bedfordshire	10 0 0	5 0 0	10 0 0
400	10	*Prescot*	10 0 0	5 0 0	
		Presteign			
120000	Sk.	*Preston*	All.	10 0 0	210 0 0
12000	,,	Do.	All.	7 0 0	140 0 0
	5⅔	Prittlewell (L.) £2000			
1000	10	Provincial (Hull)	8 0 0		8 0 0
600	20	*Pudsey*	20 0 0	10 0 0	35 0 0
600	6	Do., new shares	6 13 4	10 0 0	11 13 4
600	20	Do.	20 0 0	7 0 0	26 0 0
600	6	Do.	6 13 4	7 0 0	8 13 4
600	20	Do.	2 0 0	7 0 0	3 10 0
600	6⅔	Do.	0 13 4	7 0 0	1 3 4
93	20	Pwllheli	20 0 0	2 10 0	25 0 0
600	5	Quorndon & Mountsorrel	5 0 0	7 0 0	12 0 0
900	10	*Radcliff & Pilkington*, No. 1	10 0 0		
2100	10	Do., No. 2	6 0 0		
		Rainhill			
200	20	Ramsay, I. of Man	20 0 0	10 0 0	33 10 0
		Ramsey, Hunts			
		Ramsgate (*see* Isle of Thanet)			
		Rastrick (L.)			
		Rawmarsh			
20000	Sk.	*Reading*	100 0 0	8 0 0	140 0 0
5000	Sk.	Do.	100 0 0	5 0 0	100 0 0
3000	10	Do.	10 0 0	7 0 0	12 10 0
500	10	Do., preference	10 0 0	5 0 0	10 0 0
		Redbourn (L) £1100			
400	5	Redcar	5 0 0	4 0 0	5 0 0
1200	5	*Redhill*	5 0 0	7 0 0	6 0 0
		Redruth			
		Reigate			
1200	1	Repton (Limited)	1 0 0	5 0 0	1 1 0
2000	10	*Richmond*, Sur. (L.)	10 0 0	7 0 0	15 0 0
		Riding Mill, Broomhaugh, and Stocksfield (Limited)			
400	10	*Risca & Pontymster*	10 0 0	5 0 0	
600	5	Do.	5 0 0	4 0 0	
		Rhymney (Limited)			
400	5	Rickmansworth	5 0 0		5 0 0
180	10	Ringwood	10 0 0	5 0 0	10 0 0
		Ripley			
		Risborough			
	5	Robertsbridge (Lim.)			
		Robin Hood's Bay			
230	50	*Rochester & Chatham*		6 0 0	
		Rochford			
2600	5	Romford	5 0 0	6 0 0	5 5 0
220	10	Romsey	10 0 0	7 10 0	12 10 0
3093	10	Rossendale Union	10 0 0	10 0 0	17 2 6
600	10	Do., preference	10 0 0	10 0 0	17 2 6
2597	10	Do., new issue	6 3 0	10 0 0	11 12 6
1503	10	Do., second issue	10 0 0	7 0 0	12 10 0
		Rothwell			
		Rowley Regis & Blackheath £4000			
350	10	Royston	10 0 0	5 0 0	9 10 0
500	5	Ruabon	5 0 0	1 10 0	4 0 0
150	20	Rugby	20 0 0	10 0 0	
150	5	Do., ¼ shares	5 0 0	10 0 0	
150	6¾	Do., ¼ shares	6 13 4	10 0 0	
150	10	Do., new shares	10 0 0	10 0 0	
150	2½	Do., do.	2 10 0	10 0 0	
150	3⅓	Do., do.	3 6 8	10 0 0	
430	10	Rugely	10 0 0	5 0 0	10 10 0
4800	5	*Runcorn*	5 0 0	10 0 0	10 0 0
3250	5	Do.	0 5 0	10 0 0	0 12 6
114	31½	Ruthin	31 5 0	6 16 0	40 0 0
1500	12½	*Ryde*	12 10 0	8 0 0	15 0 0
500	5	Rye	5 0 0	6 0 0	6 0 0
		Saddleworth			
225	20	Saffron Walden	20 0 0	5 0 0	20 0 0
225	20	Do.	10 0 0		
1400	5	*St. Alban's Gas & Water* (Limited)	5 0 0	5 0 0	5 5 0
320	5	St. Asaph (Limited)	5 0 0		
		St. Austell			
		St. Bees (Limited)			
		St. Colomb			
4600	10	*St. Helen's*	10 0 0	10 0 0	
1500	10	Do.	8 0 0		
		St. Ives, Cornwall			
		St. Mary's Cray			
320	5	Salcombe (Limited)	5 0 0	2 10 0	
880	12½	*Salisbury*	12 10 0	10 0 0	23 5 0
160	12½	Do., preference	12 10 0	6 0 0	16 0 0
320	12½	Do., new shares	12 10 0	8 0 0	18 5 6
341	10	Sandbach	10 0 0	5 0 0	12 10 0
		Sandown (Limited)			
381	10	Sandwich	10 0 0	5 0 0	
		Sandy, Beds			
	5	Sawston (Lim.) £2000			
100	10	Saxmundham	10 0 0	5 0 0	
2000	10	*Scarborough*	10 0 0	7 0 0	13 0 0
1000	10	Do.	6 0 0	7 0 0	12 2 6
540	5	Sedburgh	5 0 0		
400	20	Selby	20 0 0	7 10 0	26 0 0
140	5	Settle (Limited)	3 10 0	5 0 0	
290	10	Sevenoaks	10 0 0	4 0 0	10 0 0
400	10	Shaftesbury (Limited)	10 0 0	6 0 0	10 0 0
565	5	Sheepshed (Limited)	5 0 0	6 0 0	6 0 0
135000	Sk.	*Sheffield Un.* A stock	100 0 0	0 0 0	199—200
199854	Sk.	Do., B stock	100 0 0	10 0 0	197—198
310	15	Do.	10 0 0	10 0 0	
533	6	Do.	4 0 0	10 0 0	
297	3	Do.	2 0 0	10 0 0	
307	1¼	Do.	1 0 0	10 0 0	
10321	10	Do.	2 0 0	17 10 0	6 5 0
600	5	Shefford (Limited)	4 0 0		
		Shelton, Pot. (*see* B.P.)			
400	10	*Sheppy*, Sheer., A sh.	10 0 0	4 0 0	
1681	10	Do., B shares	10 0 0	10 0 0	14 0 0
419	10	Do., B*	1 0 0	10 0 0	
350	10	Shepton Mallet	10 0 0	7 10 0	10 0 0
120	10	Shepton-und.-Wychwood (Limited)			
1600	5	Sherborne	5 0 0	7 10 0	7 10 0
		Shiffnal, Salop			
1000	5	*Shipley*	5 0 0	6 0 0	10—10½
	1¾	Do.	1 13 4		3 10 0
	10	Do.	10 0 0		19½—20
	3¼	Do.	3 6 8		6½—6¾
150	10	Shipston-on-Stour	10 0 0	4 0 0	
		Shirland, Hallfield Gate, & Higham (L.)			
		Shirley & Freemantle, Hants			
240	25	*Shotley Bridge*	25 0 0	7 0 0	26½—27
240	10	Do., new shares	10 0 0	7 0 0	
2500	10	*Shrewsbury*	10 0 0	10 0 0	16 0 0
1000	10	Do., new shares	10 0 0	7 10 0	
	5	Sible Hedingham			
		Sidmouth (L.) £4000			
7000	Sk.	*Skipton*	100 0 0	9 0 0	150 0 0
400	2½	Do., new shares	2 10 0	5 0 0	3 0 0
		Slaithwaite			
750	10	Sleaford	10 0 0	7 0 0	
250	10	*Slough*	10 0 0		
340	5	Snaith	5 0 0		4 0 0
		Soham			
500	5	Solihull (Limited)	4 0 0		
	5	Somersham (L.) £1500			
150	10	Somerton	10 0 0		
354	5	Southam	5 0 0		
1000	50	*Southampton*	50 0 0	10 0 0	
2000	5	South Bank & Normanby (L.)	5 0 0	7 0 0	5 10 0
		Southborough			
		Southend, Essex			
		Southgate & Colney H.			
220	10	South Molton	10 0 0	5 10 0	7 10 0
		South Petherton (L.)			
4000	10	*South Shields*	10 0 0	9 0 0	15 10 0
2000		Do.	3 10 0	7 0 0	5 0 0
248	10	Southwell (Limited)	10 0 0	5 0 0	11—11½
300	5	Southwold	5 0 0	5 0 0	5 0 0
1470	1	Spennymoor (Limited)	1 0 0		
400	5	Spilsby	5 0 0		
		Spittal, Ber-on-Tweed			
2000	6¾	*Stafford*	6 13 4	10 0 0	11 5 0
2000	6¾	Do., new shares	6 0 0	8 0 0	7 5 0
178	5	Staindrop	5 0 0	6 0 0	5 0 0
248	25	Staines & Egham	25 0 0	6 0 0	26—27
		Staithes £1500			
		Staley Bridge		10 0 0	
225	50	*Stamford & St. Mart's*	50 0 0	9 0 0	75 0 0
	5	Stapelhurst (L.) £2000			
150	10	Staveley (Limited)	10 0 0	5 0 6	11 10 0
300	5	Stevenage	5 0 0	5 0 0	5 0 0
2500	10	*Stoke, Fenton & Long.*	10 0 0	10 0 0	15 0 0
500	10	Do.	6 0 0	10 0 0	
400	5	Stone, Stafford	5 0 0	5 0 0	6 0 0
220	10	Stoney Stratford	10 0 0	4 10 0	9 0 0
		Storrington (L) £1000			
15000	Sk.	*Stourbridge*	All.	7 10 0	
200	20	Do., new shares	All.	7 10 0	
1100	1	Stow-on-the-Wold	1 0 0	5 0 0	1 0 0
150	20	*Stratford-on-Avon*	20 0 0	10 0 0	45 0 0
150	5	Do., new shares	5 0 0	10 0 0	11 5 0
450	10	Do., do.	10 0 0	7 0 0	13 0 0
375	8	Do.	8 0 0	5 10 0	9 10 0
750	5	*Stratford*	5 0 0	9 0 0	5 0 0
		Stroud			
261	20	Sudbury	20 0 0	6 10 0	21 10 0
		Sunbury (L.), Mid.			
90600	Sk.	*Sunderland*	100 0 0	10 0 0	190 0 0
30000	Sk.	Do., new	100 0 0	8 10 0	170 0 0
200	10	Sutton Coldfield (L.)	10 0 0		10 0 0
650	10	Sutton-in-Ashfield	10 0 0	7 10 0	15 10 0
600	5	Sutton & Hooton Gas & W. (Limited)			
		Sutton Southcoates & Drypool, Hull	20 0 0		23—24
		Sutton, Surrey			
465	5	Sutton Valence	5 0 0	5 0 0	5 0 0
600	5	Swadlincote	5 0 0	5 0 0	6 0 0
169	10	Swaffham	10 0 0	5 0 0	7 0 0
	5	Swanage (L.) £2500			
240	25	*Swansea*	25 0 0	10 0 0	50 0 0
2330	25	Do., new shares	25 0 0	7 10 0	34 10 0
655	10	Swindon	10 0 0	9 0 0	13 2 6
		Swindon New (L.)			
200	10	Swineshead (Lim.)	10 0 0	5 0 0	10 5 0
1000	5	Swinton & Mexboro'	5 0 0	7 0 0	7 0 0
180	10	Syston	10 0 0		10 0 0
276	5	Tadcaster	5 0 0	5 0 0	3 0 0
		Tamworth			
		Taporley (Limited)			
		Tattershall & Coningsby (Limited)			
2800	5	*Taunton*	5 0 0	7 0 0	6 15 3
2800	5	Do., new shares	4 10 0		5 0 0
800	6¾	Tavistock (Limited)	3 3 9	14 0 0	6—7

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
300	5	Tenbury Union	5 0 0	5 0 0	5¼—6
229	10	Tenterden	10 0 0	7 0 0	12 0 0
300	10	Tetbury, Gloster	9 0 0	10 0 0	16 0 0
	5	Tewkesbury (Lim.)			
200	10	Thame	10 0 0	5 0 0	10 0 0
250	10	Thetford	10 0 0	6 0 0	10—11
600	10	*Thirsk*	10 0 0	10 0 0	
600	10	Do.	2 0 0	7 0 0	
150	10	Thronbury (Limited)	10 0 0	4 0 0	
80	1	Do., new shares	1 0 0	4 0 0	
356	5	Thorne	5 0 0		4 0 0
160	10	Thrapston (Limited)	10 0 0	5 0 0	10 0 0
	5	Ticehurst Cons. (Lim.)			
		Tideswell (L.) £2000			
1885	5	*Todmorden* (Lim.)	5 0 0	7 10 0	7 10 0
1870	5	Do., B shares	3 0 0	7 10 0	4 10 0
600	2½	Topsham (Limited)	2 10 0	5 0 0	
		Torpoint (Limited)			
2130	10	*Torquay*	10 0 0	10 0 0	
2320	10	Do.	5 0 0	7 0 0	6—6¼
		Torrington, Devon.			
		Totnes			
		Totnes Consumers			
5000	5	*Tottenham & Edm.*	5 0 0	8 0 0	6 0 0
150	10	Towcester	10 0 0	5 0 0	10 0 0
		Town-Malling			
300	5	Towyn (L.) Merion.	5 0 0		5 0 0
	4½	Trecastle (Limited)			
275	10	Tring	10 0 0	5 0 0	10 0 0
		Trowbridge (*see* B.P.)			
320	25	Truro	25 0 0	10 0 0	
320	5	Do., new	5 0 0	10 0 0	
320	7½	Do. do.	7 10 0	10 0 0	
		Tunbridge			
2000	10	*Tunbridge Wells*	10 0 0	10 0 0	19 0 0
	5	Turvey (Limited)			
100	10	Tuxford	10 0 0	5 0 0	12 0 0
		Twyford (Limited)			
345704	Sk.	*Tynemouth*	All.	0 0 9	130 0 0
		Ulverston			
		Uppingham			
240	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
	5	Upwell & Outwell (Limited) £2500			
400	5	Usk (Limited)	5 0 0	10 0 0	8 8 0
300	10	Uttoxeter	10 0 0	6 0 0	12½—13
		Uxbridge & Hill			
1500	20	*Ventnor*	11 0 0	7 0 0	14 0 0
160	10	Wainfleet (Limited)	10 0 0		8 0 0
1000	25	*Wakefield*	25 0 0	10 0 0	44 0 0
3660	5	Do.	5 0 0	10 0 0	8 16 0
1732	5	Do., new shares	5 0 0	7 10 0	6 15 0
400	5	Walker & St. Anthony (Limited)	5 0 0		7¾—8¼
		Walker & Wall. Un.			
300	10	Wallingford	10 0 0	5 0 0	8 0 0
	10	*Waltham Abbey*			
2000	10	*Walton-on-Thames*		4 0 0	
	10	Walton-on-the-Naze Gas and Water			
200	10	Wantage	9 0 0	5 0 0	10 10 0
3500	2	Ware (Limited)	2 0 0	7 0 0	2 8 0
100	10	Wareham	10 0 0	3 10 0	8 0 0
2000	1	Warkwth & Amble	1 0 0	3 10 0	
200	25	Warminster	25 0 0	6 0 0	28 0 0
1800	20	*Warrington*	20 0 0	10 0 0	40 0 0
3690	20	Do.	6 0 0	7 0 0	9 10 0
		Warth			
		Warwick £15,000		6 0 0	
		Watchet & W. £2500			
	2	Waterbeach (L.) £2000			
		Watford			
		Wedmore (Somerset)			
400	10	Weedon (Limited)	10 0 0	6 10 0	12 10 0
400	8	Do., new shares	1 10 0	6 10 0	1 17 6
111	25	Welchpool, Montgy.	25 0 0	5 0 0	25 0 0
200	25	Wellingborough	25 0 0	5 0 0	25 0 0
1200	10	Wellington, Salop	10 0 0	7 10 0	10—11
200	20	Wellington, Somer.	20 0 0	7 10 0	22 0 0
160	25	*Wells*, Somerset	25 0 0	10 0 0	
		Wem (Limited) £2000			
	5	Wendover (Lim.)			
		West Auckland & St. Helen's, Aklnd. (L.)			
500	10	Westbury (Limited)	10 0 0	5 15 0	10 0 0
		West Cowes			
225	10	Westerham (Limited)	10 0 0	5 0 0	11 0 0
209	5	*Westhoughton* (L.)	2 10 0		
		West Kent			
454	5	West Malling G. & W.	5 0 0	3 0 0	4 10 0
200	20	*Weston-super-Mare*, A shares	20 0 0	10 0 0	38 0 0
200	20	Do., B shares	20 0 0	7 10 0	28 0 0
800	20	Do., C shares	15 0 0	7 10 0	21 0 0
200	5	Wetherby	5 0 0		1 10 0
3000	10	*Weymouth Cons.*	10 0 0	5 0 0	10 0 0
		Whaley Bridge			
1300	10	*Whitby*	10 0 0	10 0 0	20 0 0
323	10	Do.	10 0 0	7 0 0	14 0 0
1177	10	Do.	2 0 0	7 0 0	
2300	1	Whitchurch, Hants	0 10 0	5 0 0	
400	20	Whitehaven	20 0 0	8 0 0	34 0 0
400	5	Do., new shares	5 0 0	8 0 0	9 0 0
		Whitehaven New			
		Whitstable			
		Whittington			
250	10	Whittlesea	10 0 0	5 0 0	11 0 0
300	10	Whitwick & Coalville	10 0 0		10 0 0
2400	5	*Whitworth Vale*	5 0 0	10 0 0	8 12 6
1164	5	Do., new shares	1 10 0	7 10 0	2 10 0
	5	Wickam. M. (L.) £1000			
		Widnes Gas & Water.			
1250	10	*Wigan*	10 0 0	10 0 0	20 0 0
1250	10	Do., preference	10 0 0	5 0 0	10 0 0
2500	10	Do., new shares	5 0 0	7 10 0	8 15 0
400	5	Wigston	5 0 0	6 0 0	5 0 0
		Wigton, Cumberland			
1020	5	*Willenhall*, A shares	5 0 0	10 0 0	9 0 0
1020	5s.	Do., B shares	2 14 0	5 0 0	2 14 0
510	5	Do., new C shares	5 0 0	7 10 0	7 0 0
918	5	Do., do.	0 10 0	7 10 0	
		Wilmslow			
		Wilton			
	10	Wimborne Minster	10 0 0		
	10	Wincanton	10 0 0	7 0 0	
		Winchcombe £1500			
1610	25	*Winchester Gas & W*	25 0 0	5 0 0	25 0 0
		Windermere District			
1200	20	*Windsor* (Limited)	20 0 0	10 0 0	30 0 0
1200	8	Do., pref. shares	8 0 0	5 0 0	8 0 0
120	20	Do.	20 0 0	7 0 0	23 0 0
300	20	Do.	5 0 0	7 0 0	
141	10	Winslow	10 0 0	6 0 0	10 0 0
120	10	Winterton (Limited)	10 0 0	5 0 0	
120	5	Do., new shares	5 0 0	5 0 0	
200	10	Wirksworth	10 0 0	5 0 0	10 0 0
		Wisbeach			
		Witham			
		Withersea (Limited)			
		Witney			
400	5	Wivelliscombe (Lim.)	5 0 0	6 0 0	5 5 0
		Wivenhoe (L) £2000			
200	10	Woburn	10 0 0	5 0 0	11 0 0
		Woking			
210	10	Wokingham	10 0 0	5 0 0	
98360	Stk.	*Wolverhampton*	100 0 0	10 0 0	200 0 0
550	10	Woodbridge (Lim.)	10 0 0	10 0 0	20 10 0
660	2½	Woodstock	2 10 0	5 0 0	
		Woodhouses			
200	7	Wooler	7 0 0		
6000	Stk.	*Woolton*	Stock	10 0 0	150 0 0
2400	5	*Woolwich Consumers*	5 0 0	10 0 0	8 0 0
2400	5	Do., do.	5 0 0	7 10 0	7 0 0
4800	5	Do., do.	3 0 0	7 10 0	4 0 0
		Woolwich Equitable			
400	5	Wootton Bassett, Lim.	5 0 0	5 0 0	5 0 0
2500	10	*Worcester*	10 0 0	10 0 0	22 10 0
		Workington			
600	10	*Worksop*	10 0 0	8 0 0	
600	5	Do., new shares	5 0 0	7 0 0	
650	10	*Worthing*	10 0 0	6 0 0	10—10½
		Worsboroughdale & Worsborough			
270	12	Wotton-under-Edge	12 0 0	4 0 0	40 0 0
12000	Stk.	*Wrexham*	Stock	10 0 0	130—140
1300	10	Do.	10 0 0	7 0 0	11 0 0
		Writtle			
		Wye, Kent			
		Wylam			
400	20	Wymondham	5 0 0	5 0 0	5 0 0
		Yarmouth, Isle of Wight			
800	30	*Yarmouth, Norfolk*	30 0 0	8 0 0	
800	7½	Do., ¼ shares	7 10 0	7 10 0	
	5	Yatton Consumers (L)			
1675	4	*Yeadon & Guiseley*	4 0 0	5 0 0	4 8 0
1675	2	Do., new shares	0 5 0	5 0 0	0 5 6
280	30	Yeovil	30 0 0	6 0 0	30 0 0
280	10	Do.			
140	10	Do., new shares	10 0 0	6 0 0	10 0 0
		York Town			
15000	5	*York United*	5 0 0	10 0 0	11 2 6
5000	5	Do.	4 0 0	10 0 0	9 2 6
		Yoxford			
	5	Ystalyfera (L.) £4000			
	10	*Ystrad Gas & W.*	2 0 0		
	5	Ystrad Rhondda (L.)			
		SCOTLAND.			
700	1	Aberlady			
		Abernethy			
		Aberlour (L.) £650			
500	10	Airdrie	10 0 0	9 0 0	14 10 0
		Alloa			
		Alva, near Stirling			
		Alyth			
600	7	Annan	7 0 0	7 0 0	7 5 0
1600	1	Anstruther & Cellardyke	1 0 0	8 0 0	1 6 0
125	20	Ardrossan	20 0 0	8 0 0	20 0 0
658	1	Auchinleck	1 0 0		
381	5	Auchterarder	5 0 0	7 10 0	7 10 0
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
2932	5	Ayr	5 0 0	6 0 0	6 8 0
4250	2	Ayr & Newton Cons.	2 0 0	6 0 0	2 2 0
300	10	Banff	10 0 0	6 0 0	11 0 0
2158	1	Barrhead	1 0 0	7 10 0	1 0 0
200	5	Bathgate	5 0 0	5 0 0	5 0 0
		Beith			
976	1	Bervie	1 0 0	5 0 0	
		Biggar			
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0
		Blantyre (Limited)			
400	6	Borrowstowness	6 0 0	5 0 0	6 0 0
5500	1	Bothwell (Limited)	1 0 0	7 10 0	1 10 0
540	5	Brechin	5 0 0	11 0 0	14 0 0
		Bridge of Allan			
		Callender			
		Campbelton			
		Carluke, Lanark			
250	4	Carnoustie	4 0 0	7 10 0	4 0 0
178	5	Castle Douglas	5 0 0	5 0 0	5 0 0
2330	3	Coatbridge	3 0 0	10 0 0	5 0 0
200	5	Coldstream	5 0 0	6 0 0	5 0 0
		Collinsburgh			
1000	1	Comrie	1 14 8	4 10 0	1 14 8
		Corstorphine			
1200	1	Crail, Fife	1 0 0	5 0 0	1 0 0
2744	1	Crieff	1 0 0	10 0 0	1 15 0
600	1	Cullen	1 0 0	5 0 0	0 15 0
280	2½	Cumbernauld	2 10 0	5 0 0	2 10 0
200	5	Cumnock	5 0 0	6 0 0	6 0 0
600	5	Cupar Angus	5 0 0	7 0 0	6 10 0
250	10	Cupar Fife	10 0 0	10 0 0	18 10 0
		Dalkeith	10 0 0	10 0 0	20 0 0
300	10	Deanston			
750	2	Denny	2 0 0	6 5 0	2 5 0
		Denny Consumers			
	5	Dornoch			
500	1	Douglas	1 0 0	6 0 0	1 2 0
		Dufftown			
600	5	Dumbarton	5 0 0	20 0 0	16 0 0
13500	Stk.	Dumfries	Stock	8 15 0	
391	5	Dunbar	5 0 0	6 0 0	5 10 0
		Dunblane			
860	10	Dunfermline	10 0 0	7 10 0	21 0 0
430	17½	Do. new shares	17 10 0		19 0 0
		Dunkeld			
1750	2	Dunoon	2 0 0	6 0 0	2 3 0
		Dunse			
256	5	Dysart	5 0 0	7 10 0	6 10 0
2327	1	East Wemyss	1 0 0	6 0 0	1 2 0
750	1	Ecclefechan	1 0 0		
6600	25	*Edinburgh*	25 0 0	10 0 0	52 10 0
6000	25	*Edinburgh & Leith*	23 0 0	8 0 0	34 15 0
621	12	Elgin	12 0 0	6 0 0	13 0 0
1300	1	Elie & Earlsferry	1 0 0	7 5 0	1 3 0
		Ellon			
		Errol			
		Eyemouth			
	14	Falkirk	14 0 0	7 0 0	14 0 0
		Falkirk, New			
632	2	Falkland	2 0 0	5 0 0	2 0 0
		Fettercairn			
2000	1	Ferry Port on Craig	1 0 0	6 5 0	1 3 0
581	1	Fochabers	1 0 0	5 0 0	1 2 0
		Fort William			
2000	1	Fraserburgh	0 16 0	5 0 0	0 18 0
1800	7½	Galashiels	7 10 0	7 10 0	9 10 0
		Gatehouse, near Fleet			
900	2½	Girvan	2 10 0	6 0 0	2 10 0
		Grahamston			
190	10	Grangemouth	10 0 0	5 0 0	10 0 0
400	8½	Haddington	8 5 0	7 10 0	11 10 0
	1	Hamilton Corporation & Consumers			
	5	*Hamilton, New*	5 0 0	4 10 0	6 0 0
1486	5	Hawick	5 0 0	10 0 0	9 0 0
300	5	Helensburgh	5 0 0	7 10 0	7 10 0
2000	2	Holywood (Limited)	2 0 0	7 10 0	3 0 0
1312	1	Huntly	1 0 0	7 10 0	1 5 0
268	2	Innellan (Limited)			
250	5	Inverary	5 0 0	10 0 0	6 12 6
1500	1	Inverkeithing (L.)	1 0 0	5 0 0	1 0 0
800	1	Inverkip (Limited)	0 10 0		
1200	10	*Inverness Gas & W.*	10 0 0	7 10 0	13 0 0
2400	5	Do., new shares	5 0 0	7 10 0	6 10 0
		Inverury			
	10	Irvine	10 0 0	10 0 0	14 0 0
	2½	Do.	2 10 0	10 0 0	3 12 6
600	5	Jedburgh	5 0 0	10 0 0	7 0 0
		Johnstone, Paisley			
		Kamesburgh (Lim.)			
1300	1	Keith	1 0 0	5 0 0	0 11 0
600	5	Kelso	5 0 0	10 0 0	11 0 0
620	2	Kelsyth	2 0 0	5 0 0	2 0 0
950	1	Kennoway	1 0 0	5 0 0	1 1 0
1515	1	Kettle Freuchie, &c.	1 0 0	5 0 0	5 0 0
334	5	Kincardine	5 0 0	5 0 0	4 10 0
		Kinghorn			
		Kingskettle, Fife			
		Kinross			
1200	5	Kirkcaldy	5 0 0	10 0 0	10 10 0
320	8	Kircudbright	8 0 0	7 10 0	8 0 0
1200	5	Kirkintilloch	5 0 0	8 10 0	7 15 0
		Kirkwall			
		Kirriemuir			
		Lanark			
3500	1	Lanark Consumers (L)	1 0 0	7 10 0	1 2 6
		Largo, near Leven			
280	8	Largs	8 0 0	7 10 0	8 10 0
1309	1	Lasswade	1 0 0		
177	5	Lauder	5 0 0	5 0 0	5 0 0
		Laurencekirk			
000	1	Leslie, Fife	1 0 0	7 10 0	1 5 0
618	1	Lesmahago	1 0 0	6 0 0	1 0 0
		Leuchars			
906	5	Leven	5 0 0	10 0 0	7 0 0
100	10	Linlithgow	10 0 0	10 0 0	19 0 0
		Linton			
		Lochee, near Dundee			
434	5	Lochgilphead (Lim.)	5 0 0	7 0 0	5 10 0
380	5	Lochwinnock	5 0 0	3 10 0	4 0 0
	44/5	Lockerbie (Limited)	5 0 0		
		Macduff			
1200	1	Markinch, Paisley	1 0 0	8 0 0	1 5 0
		Maryhill, nr. Glasgow			
282	3	Mauchline	3 0 0	5 0 0	3 0 0
667	5	Maxwell Town & Dum-fries	5 0 0	5 0 0	3—3¼
423	5	Maybole, Ayrshire	5 0 0	4 10 0	5 0 0
		Meigle (Lim.) £700			
373	2	Melrose	2 0 0	7 10 0	2 10 0
718	2	Mid & East Calder	2 0 0		2 0 0
200	5	Moffat	5 0 0	5 0 0	
120	2½	Do., new shares	2 10 0	5 0 0	
400	20	Montrose	20 0 0	10 0 0	35 0 0
		Muirkirk (L.) £1000			
1000	5	Musselburgh	5 0 0	8 0 0	9 9 0
618	1	Nairn	1 0 0	5 0 0	1 0 0
		Neilston, n. Glasgow			
300	5	Newburgh, Fife	5 0 0	8 0 0	7 0 0
300	1	Do., new shares	1 0 0	8 0 0	
1200	1	Newmilns	1 0 0	7 10 0	1 2 0
		Newport, nr. Dundee			
1300	1	Newport, Fife	1 0 0	5 0 0	1 1 0
		Newton-on-Ayre			
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0
300	5	N. Berwick, N.B.	5 0 0	5 0 0	7 10 0
		North Queensferry			
		Oban	5 0 0	7 10 0	5 7 6
245	5	Patrick Hillhead and Maryfield (Lim.)			
		Peebles	5 0 0	6 0 0	5 0 0
		Do., new shares	2 10 0	6 0 0	2 10 0
1000	5	Peterhead			
500	2½	Pettenween	1 0 0	6 0 0	1 1 0
		Pollokshaws	1 0 0	7 10 0	1 5 0
2000	1	Port Glasgow			
2416	1	Portobello			
		Portsoy			
200	5	Prestonpans	5 0 0	6 0 0	
1594	1	Renton, Dumbarton	1 0 0	7 10 0	1 1 0

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		Rothes			
1500	1¼	Rutherglen	1 6 8	5 0 0	1 6 8
424	12	St. Andrew's	12 0 0	10 0 0	19 0 0
193	12	Do., new shares	12 0 0	8 6 8	16 10 0
400	5	Saltcoats	5 0 0	£10 & £5 bon.	8 19 0
936	1	Sanquhar	1 0 0	5 0 0	0 15 0
30	1	Do., preference	1 0 0	5 0 0	
507	5	Selkirk	5 0 0	10 0 0	10 0 0
	2	Slamannan (Limited)			
508	1	South Queensferry	1 0 0	5 0 0	1 0 0
800	2	Steventon	2 0 0	5 0 0	2 0 0
200	5	Stewarton	5 0 0	10 0 0	6—6½
7450	2	Stirling	2 0 0	10 0 0	4 0 6
2500	1	Stonehaven	1 0 0	10 0 0	2 0 0
1110	1	Stonehouse	1 0 0	7 10 0	13s—15s
600	2½	Stornoway	2 10 0	8 0 0	3 10 0
		Stow (Limited)			
500	5	Stranraer	5 0 0	10 0 0	6 13 6
588	2	Strathaven	2 0 0	8 0 0	3 0 0
643	2½	Thurso	2 10 0		2 10 0
		Tillicoultry			
		Turriff			
800	1	Tranent	1 0 0	5 0 0	1 0 0
		Troon			
		Tullibody			
2651	1	Wemyss & Buckhvn.	1 0 0	6 0 0	1 0 0
		West Calder (Lim.)			
		Wick			
665	5	Wigtown	5 0 0		
		IRELAND.			
1800	1	Antrim (Limited)	1 0 0		1 0 0
		Ardee			
300	10	Armagh (Limited)	10 0 0	10 0 0	20 0 0
300	10	Do.	7 0 0	10 0 0	16 0 0
500	5	Athy (Limited)	4 9 0	6 0 0	5 0 0
		Balbriggan . . £1400			
		Ballabay			
		Ballycastle [ville (L.)			
1200	7½	Ballymena & Harryville (Limited)	7 10 0	5 0 0	7 12 6
184	10	Ballymoney	10 0 0	5 0 0	10 0 0
220	5	Ballynahinch (Lim.)	5 0 0	5 0 0	5 0 0
		Ballyshannon . £2000			
		Bangor, Down			
5250	20	*Belfast*	20 0 0	10 0 0	39 0 0
2450	20	Do., new shares	20 0 0	10 0 0	35—37
		Boyle (Limited)			
1047	5	Carlow	5 0 0	5 0 0	5 0 0
600	5	Carrickfergus (Lim.)	5 0 0	10 0 0	12 10 0
200	10	Carrickmacross (Lim.)	10 0 0	6 0 0	9 0 0
300	10	Carrick-on-Suir	10 0 0	6 0 0	10 0 0
228	10	Castleblaney (Lim.)	10 0 0	5 0 0	10 0 0
		Castlederg			
400	5	Cavan (Limited)	5 0 0		5 0 0
		Clones (Lim.) . £2000			
2000	5	Clonmel Consumers	5 0 0	6 0 0	5 10 0
240	5	Comber (Limited)	5 0 0	5 0 0	5 0 0
500	5	Cookstown	5 0 0	5 0 0	
		Coote Hill			
18000	5	*Cork Consumers* (L)	5 0 0	8 0 0	8 0 0
6000	5	Do., new shares	4 0 0	8 0 0	7 0 0
		Donaghadee . £2000			
608	11	Drogheda	11 0 0	7 0 0	14 10 0
420	5⅓	Do., new shares	5 10 0	7 0 0	7 5 0
15200	10	*Dublin Alliance*, Ash.	8 0 0	6 0 0	11¾—12
5500	10	Do., B shares	5 10 0	6 0 0	7⅞—8
13500	10	Do., C No. 1 shares	10 0 0	6 0 0	15¼—15½
90750	10	Do., C No. 2 shares	5 10 0	6 0 0	7⅞—8
440	25	Dundalk (Limited)	25 0 0	6 0 0	27 0 0
600	5	Dungannon	5 0 0	5 0 0	6 0 0
871	5	*Downpatrick*	5 0 0	4 0 0	4 0 0
249	10	Ennis (Limited)	10 0 0		11 0 0
240	25	Galway	25 0 0	10 0 0	35 0 0
		Gorey (Lim.) . £2000			
		Holywood (Limited)			
	10	Howth (L.) . . £3500			
		Keady			
600	5	Kells (Lim.) Meath	5 0 0	6 0 0	5 0 0
600	10	Kilkenny (Limited)	10 0 0	9 0 0	12 10 0
		Killarney (L.) . £3000			
		Kilrush			
		Kinsale (L.) . . £2000			
210	10	Larne (Limited)	10 0 0	5 0 0	10 0 0
150	10	Letterkenny (Lim.)	10 0 0	7 10 0	13 10 0
600	15	Lisburn (Limited)	12 0 0	8 6 8	14 10 0
300	5	Lismore	5 0 0	3 0 0	
100	5	Do., preference	3 0 0	5 0 0	
1200	27½	Londonderry	27 10 0	7 5 0	42 10 0
1000	3	Longford	3 0 0	5 0 0	3 0 0
520	10	Lurgan	9 0 0	6 0 0	11 0 0
	1	Maghera (Limited)			
		Magherafelt (Lim.)			
		Mallow			
2191	1	Maryborough (Lim.)	0 5 0		0 5 0
		Midleton			
770	5	Monaghan (Limited)	5 0 0	4 10 0	5 16 0
2000	10	Navan	5 0 0	6 0 0	4 0 0
		Nenagh			
1000	5	New Ross	3 10 0	12 10 0	6 0 0
1400	5	Newry Conrs. (Lim.)	5 0 0	10 0 0	8 3 0
450	5	Newtownards	5 0 0	7 0 0	6 5 0
200	10	Newtownlimavady	10 0 0	5 0 0	10 0 0
		Omagh	5 0 0	7 10 0	6 0 0
414	5	Parsonstown (Lim.)	5 0 0		
250	20	Portadown	20 0 0	5 0 0	20 0 0
125	20	Portaferry			
700	10	Queenstown	10 0 0	6 0 0	11 0 0
		Randalstown (Lim.)			
		Rathkeale (Limited)			
		Roscommon . . £2500			
	5	Roscrea (L.) . . £2500			
		Saintfield (L.) . £1000			
600	5	Skibbereen (Lim.)	5 0 0	4 0 0	
600	10	Sligo	10 0 0	8 0 0	15 0 0
600	5	Do., new shares	5 0 0	8 0 0	7 10 0
		Tandragee (Limited)			
	5	Thurles (L.) . £2500			
		Tuam (Lim.) . £3000			
540	5	Tullamore	5 0 0	6 0 0	5 0 0
240	5	Tullow	5 0 0	6 0 0	5 0 0
		Warrenpoint . £3000			
1600	10	*Waterford*	10 0 0	6 0 0	12 0 0
1200	5	Wexford Consumers	5 0 0	10 0 0	8 0 0
300	10	Wicklow (Lim.)	10 0 0	6 0 0	10 0 0

Share List of Water Companies.

See "Share List of Gas Companies" for Gas and Water Companies.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Dividend per Ct. per Annum.	Last Quotation.
	£		£ s d	£ s d	£ s d
		Airdrie & Coatbdge			
		Aldeburgh (Lim.)			
588	1	Alexandria, Dumbartonshire	1 0 0		0 2 6
		All Stretton (Lim.)			
200	20	Ardrossan	20 0 0	6 0 0	27 0 0
	106	Ashford (Limited)			
800	25	Ayr	25 0 0	5 0 0	25 0 0
1460	10	Banbury	10 0 0	3 10 0	9 0 0
		Basingstoke and Estrop (Lim.)			
		Belper			
9600	25	Birmingham	25 0 0	6 10 0	34 0 0
9600	17½	Do., new shares	3 0 0	6 10 0	
6000	10	Blackburn	10 0 0		
		Bognor (Lim.)			
		Boston			
		Bridge of Earn (L.) £450			
	1	Brightlingsea (L.)			
		Brighton, Hove, & Preston			
8000	25	Bristol	25 0 0	3 2 0	20—21
8000	12½	Do., preference	12 10 0	5 0 0	13 2 6
500	10	Briton Ferry	5 0 0		
		Broadstairs		4 0 0	
		Brompton & Gillingham			
		Burgess Hill & St. John's Cm. (L.)			
5000	10	Bury & Radcliffe	10 0 0	2 0 0	10 0 0
1333	15	Do., pref. shares	15 0 0	10 0 0	31 15 0
1333	18	Do., do.	6 0 0	10 0 0	14 0 0
2000	10	Do., do.	5 0 0	4 0 0	5 0 0
2000	10	Do., do.	1 0 0	4 0 0	5 0 0
	5	Calverley District	3 10 0		4—4½
3250	Sk.	Cambridge	100 0 0	7 10 0	180 0 0
3250	3	Do.	2 15 0	7 10 0	
45000	Sk.	Cardiff	100 0 0	7 10 0	115 0 0
1500	10	Do.	8 0 0	5 15 0	9 0 0
	10	Charlemb. L. £3000			
55625	Sk.	Cheltenham	100 0 0	7 0 0	145 0 0
687½	25	Do., pref. shares	25 0 0	4 10 0	25 0 0
		Chepstow			
		Chester			
2485	2	Clay Cross	2 0 0	8 0 0	2 16 0
508	2	Do.	0 10 0		0 14 0
1200	10	Cleveland	10 0 0	6 0 0	13 0 0
1800	10	Do.	4 0 0	6 0 0	6 0 0
		Colchester			
175	20	Colne, Lancashire	20 0 0	5 0 0	28 0 0
	5	Consett District	4 0 0		4¾—4¾
	2	Corwen (Limited)			
		Cottingley (Lim.)			
		Dartford			
1250	20	Darwen	20 0 0	3 0 0	15½—16½
1400	5	Deal	5 0 0	7 0 0	7 0 0
1600	25	Derby	25 0 0	10 0 0	56 0 0
3200	12½	Do.	4 0 0	7 0 0	5 5 0
		Dolgelly			
400	50	Dudley	50 0 0	1 0 0	20 0 0
250	25	Do., pref. shares	25 0 0	4 10 0	
		Dukinfield			
9500	10	Dundee	10 0 0	7 10 0	15 0 0
5100	10	Do.	10 0 0	6 10 0	13 10 0
2670	5	Dunfermline	5 0 0	2 0 0	2 10 0
	5	Durham	5 0 0		7¼—7½
		East Barnet G. & W			
7360	25	Edinburgh	25 0 0	5 0 0	28 0 0
7360	12½	Do., new shares	12 10 0	5 10 0	16 0 0
7218	6¼	Do., do. ½ shares	6 5 0	5 0 0	7 0 0
5581	6¼	Do., do. do.	2 10 0	5 0 0	2 15 0
2000	25	Exeter	25 0 0	6 10 0	42 0 0
		Falmouth			
	2	Fenny Com. L. £600			
		Folkestone			
		Frome (Lim.)			
		Gosport			
	20	Gravsnd. & Milton	20 0 0	3 0 0	14—16
		Great Grimsby (L)			
1000	5	Greenock (Shaw's Gravitation)	50 0 0	7 0 0	68—70
		Guiseley, n. Leeds			
		Harrogate			
		Heywood			
		High Wycombe (L.)			
390	10	Horsham (Lim.)	10 0 0	2 10 0	
		Hunstanton (Lim.)			
1500	10	Kilmarnock	10 0 0	2 0 0	8 0 0
3200	25	Leicester	25 0 0	4 10 0	27 10 0
120	25	Lewes	25 0 0	6 0 0	26 0 0
		Limerick			
1080	25	Lincoln	25 0 0	8 0 0	43 10 0
2300	5	Luton	4 0 0		
		London Comps.—			
		Berlin	10 0 0	4 10 0	8—9
		Chelsea	25 0 0	5 5 0	28—29
		East London	Stock.	6 0 0	126—128
		Grand Junction	50 0 0	8 0 0	78½—79
		Do., ¼ shares	25 0 0	8 0 0	39¼—39½
		Do., new ¼ sh.	10 0 0	7 10 0	
		Kent	100 0 0	6 0 0	129—131
		Lambeth	100 0 0	6 0 0	110—115
		Do., new shares	50 0 0	6 0 0	51¼—53
		New River		441 6 8	£17,400
		New River London		per sh.	
		Bge. Annuities	100 0 0	2 10 0	55 0 0
	5	N. Mdlsx. L. £30,000			
		Sthwk. & Vauxhall	100 0 0	6 0 0	126—128
		Do., do.	25 0 0	6 0 0	31½—33½
		Do., do.	100 0 0	5 0 0	104—106
		Do. (1867)	85 0 0	4 10 0	106—108
		West Middlesex	61 0 0	5 15 0	110 0 0
				per sh.	
		Do., new shares	6 2 0	4 0 0	9—9¼
		Liskeard			
		Maidstone			
		Maldon (Lim.)			
		Margate			
		Matlock			
650	10	Neath	10 0 0	7 10 0	14 0 0
310000	Sk.	Newcstl. & Gatshd.	All.	4 10 0	77—78
9600	6¼	Do., pref. do.	5 0 0	5 0 0	5¼—5¾
135	20	Nwprt., Carisbrook	20 0 0	4 10 0	20 6 0
		Newport, Mon.			
		Newry (L.) £6000			
		Norwich			
1979	10	North Cheshire	10 0 0	10 0 0	17 0 0
42	5	Do.	5 0 0	10 0 0	8 10 0
1600	10	Do.	7 0 0	10 0 0	11 10 0
	10	North Shields	10 0 0		12—12½
4400	50	Nottingham	50 0 0	5 0 0	62 0 0
	5	Papcastle (Limited)			
		Pontypridd (Lim.)			
		Pocle District (L.)			
	5	Portland (Lim.)			
8000	10	Portsmouth	10 0 0	6 0 0	
8000	5	Do.	2 10 0	6 0 0	
451	10	Queenstown (L.)	10 0 0	6 0 0	10 0 0
693	5	Ramsey, I. of Man	5 0 0	10 0 0	9 5 0
1500	10	Ramsgate	10 0 0	6 0 0	13—13½
		Rastrick			
		Rawfolds District			
		Reading			
		Rochdale			
		Rothesay (L.) £7000			
		Royston (L.) £2500			
		Saffron Walden (L.)			
900	10	St. Alban's	10 0 0	4 0 0	10 0 0
		St. Helen's			
	1	Sanquhar (Lim.)			
		Scarborough			
		Sealby (Limited)			
	100	Sheffield			71—72
	50	Do.			35—36
	25	Do.			17—18
	50	Do., preference			40—41
	12½	Do., B do.	10 0 0		½—¾ pm.
	8	Do., C do.	2 0 0		2 6 6
		Shrewsbury			
		Southend (Lim.)			
		Southport			
11184	10	South Staffordshire	10 0 0		11 17 0
2554	10	Do.	5 0 0		
		Spalding			
21000	5	Stffrdshire. Pottrs.	5 0 0	6 0 0	7 5 0
1800	12½	Stockton & Middlesboro'	12 10 0	6 0 0	
800	12½	Do., A shares	12 10 0	6 0 0	
1591	12½	Do., B shares	7 0 0	6 0 0	
4000	10	Do., C preference	2 0 0	5 0 0	2¾
		Stow-on-W. £1000			
38400	5	Sndrlnd. & S. Shlds.	5 0 0	9 10 0	9 12 6
10000	1	Swindon	1 0 0	5 0 0	1 5 0
		Tintwhistle			
		Tolcross, Lanark			
		Tweedm'th (L.) £500			
		Wakefield			
3000	10	Warrington	10 0 0	5 10 0	12 0 0
5000	3	Do.	10 0 0	5 10 0	11 0 0
		Wellington, Salop			
		Wells (L.) Somerset			
		Weston-sup-Mare			
		Weymouth			
		Winchester G. & W.			
		Wirral, Cheshire			
20000	5	Wolverhmptn New	5 0 0	4 0 0	5 0 0
278	1	Woodford Halse (L)	1 0 0		
	1	Wyke (Limited)			
		Yeadon (Limited)			
6000	10	York New Co.	10 0 0	5 0 0	11 12 6

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Chard.
Clare, Suffolk.
Crewe.
Dingwall.
Ebbw Vale.
Eccleshill, near Leeds.
Ellesmere.
Enniscorthy.
Farsley.
Fermoy.
Ferry Hill.
Goole.
Hadleigh.
Halstead.
Harleston.
Harrow-on-the-Hill.
Hayle.
Holt.
Hunmanby.
King's Langley.
Leiston (Suffolk).
Lilleshall, Salop.
Mullingar*.
Milnrow, nr. Manchester.
Mold Green, nr. Huddersfield.
Nantwich*.
Nettlebed.
New Ross.
Oakham*.
Parsonstown.
Penryn.
Pontypool.
Redditch.
Rhosllanerchrugog.
Ripon.
Ross.
Rhyl.
St. Blazey (Cornwall).
St. Ives* (Hunts).
St. Neots*.
Seaham.
Sittingbourne.
Southall, Midlsex.
Stokesley.
Stowmarket.
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Whitchurch (Salop).

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Beverley.
Bingley.
Birkenhead.
Blackpool, & Layton with Warbk.
Bollington (Ches.).
Bolton.
Bradford (Yrksh.)
Brighouse.
Broughty Ferry.
Burnley.
Burton-on-Trent.
Bury (Lanc.).
Buxton.
Carlisle.
Cashel.
Chorley.
Cleckheaton.
Coleraine
Congleton.
Dalton.
Darlington.
Devizes.
Doncaster.
Dundee.
Enniskillen.
Forfar.
Glasgow.
Great Malvern.
Greenock.
Halifax.
Haverfordwest.
Haworth.
Hereford.
Heywood.
Highbridge.
Hindley.
Keighley.
Kilmarnock.
Knaresborough.
Leeds.
Leek.
Limerick Corporation Works.
Lytham (Lanc.).
Lymm.
Macclesfield.
Manchester.
Maryport.
Middlesborough.
Middleton.
Milton (Kent).
Nelson, n. Burnley.
Newton (Lanc.)
Oldham.
Oswaldthwistle.
Paisley.
Perth.
Renfrew.
Richmond (Yksh.)
Ripon.
Rochdale.
Rotherham.
Rothesay.
St. Mary Church.
Salford.
Southport.
Sowerby Bridge.
Spalding.
Stockport.
Stockton-on-Tees.
Strabane.
Teignmouth.
Tenby.
Tralee.
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Tyldesley & Shakerley.
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Widnes.
Workington.
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Bilston.
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Bishop's Auckland.
Bolton.
Bradford, Yorkshire.
Brynmaur, Brecon.
Burnley.
Bury St. Edmund's.
Carlisle.
Carmarthen.
Chelmsford.
Chorley
Cork
Coventry
Croydon.
Darlington.
Dartmouth.
Dorchester.
Dover.
Dublin.
Dumfries.
East Stonehouse.
Ely.
Epsom, Surrey.
Fareham, Hants.
Glasgow.
Gloucester.
Greenock.
Halifax.
Hastings and St. Leonard's.
Haverfordwest.
Haworth, Yorkshire.
Huddersfield.
Hull.
Ilfracombe, Devon.
Keighley.
King's Lynn.
Kirkcaldy.
Knighton, Radnor.
Lancaster.
Leamington.
Leeds.
Leek.
Leith.
Liverpool.
Llandilo.
Llanelly.
Lytham.
Macclesfield.
Maidstone.
Manchester.
Merthyr Tydvil.
Montrose.
Nantwich, Cheshire.
Oldham.
Oxford.
Paisley.
Pembroke.
Penrith.
Penzance.
Perth.
Peterhead.
Pontefract.
Poole.
Port Glasgow.
Preston.
Pultneytown, Caithness.
Rotherham.
Rugby.
Salford.
Salisbury.
Sheerness.
Shipley.
Southampton.
Stirling.
Stockport.
Stroud.
Swansea.
Teignmouth.
Torquay.
Tunbridge Wells.
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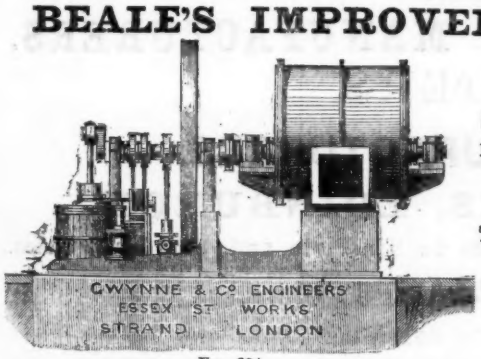

FIG. 224.

WITH

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Mr. BEALE,

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GAS-EXHAUSTING MACHINERY.

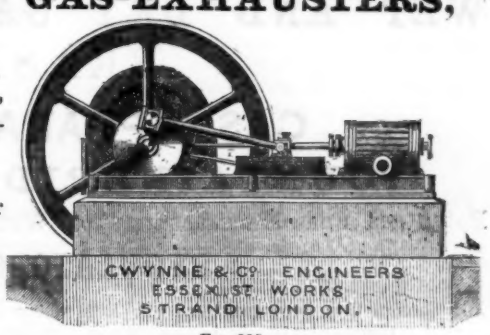

FIG. 225.

Fig. 224 represents one of those erected at the Imperial Gas-Works, Bromley, capable of passing 210,000 cubic feet of gas per hour. These Patent Machines combine the highest quality of workmanship and materials, the largest bearings and wearing surfaces, with the **most perfect system of action yet discovered.** Fig. 225 represents one of a series of four at the Nottingham Gas-Works, each passing 52,500 cubic feet per hour. GWYNNE AND Co. do not pretend to enter into a struggle with other makers in respect to **cheapness.** They have never sought to make **price the chief consideration,** but to produce Machinery of the very highest quality, and the most approved design and arrangement. Their prices have been estimated with a due regard to the **excellence of the article produced,** and when this is taken into consideration, they have no fear for the result.

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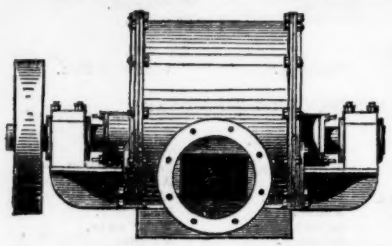

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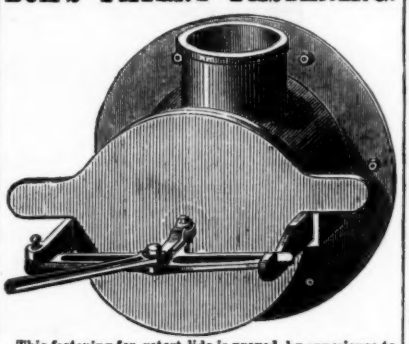

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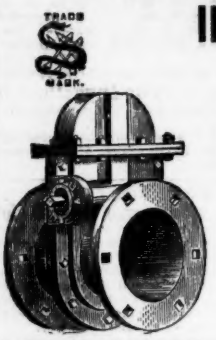

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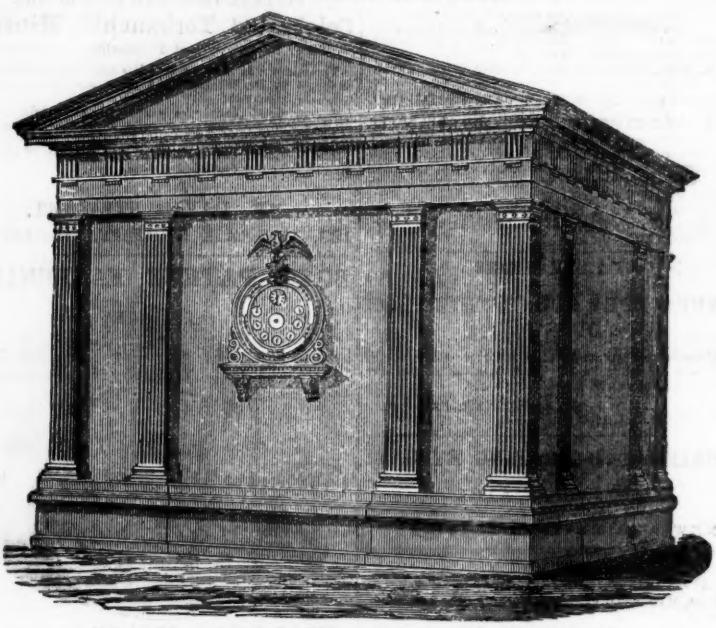

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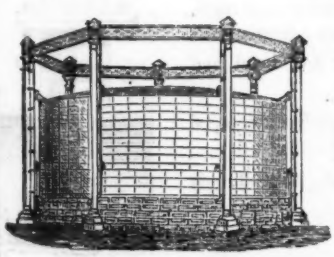

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BRONNER'S PATENT GAS-BURNERS give 99 per cent. of light, as compared with 27 per cent. given by ordinary burners, with equal consumption of gas.—*Vide* "Gas Referees Report," published June, 1869.

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J. SUGG and CO., late ALBERT KELLER, GHENT.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.

Communications addressed to J. SUGG & CO., GHENT, will receive immediate attention.

CATHELS & TERRACE'S Patent Four-WAY DISC GAS-VALVE is the simplest and best Valve for Purifiers, and as a By-pass for other apparatus in Gas-Works. It is always gas-tight, and has no springs, ground faces, or other delicate parts. By its use the flow of the gas cannot be accidentally stopped, and it never sticks.

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NEAR NEWCASTLE-UPON-TYNE,

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TO GAS COMPANIES, ENGINEERS, &c.

WOOD SIEVES.—WOOD SIEVES.

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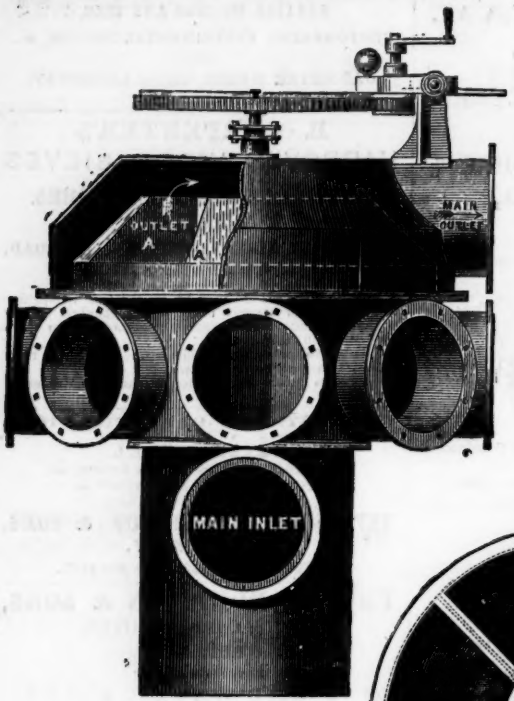
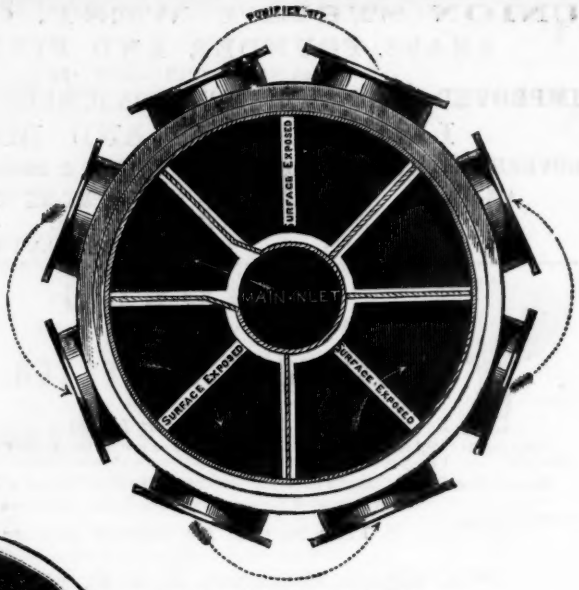
These Sieves are made with parallel or bevel bar, and guaranteed to be well seasoned yellow deal, and not common spruce so generally used.

N.B.—Specimens sent free on application.

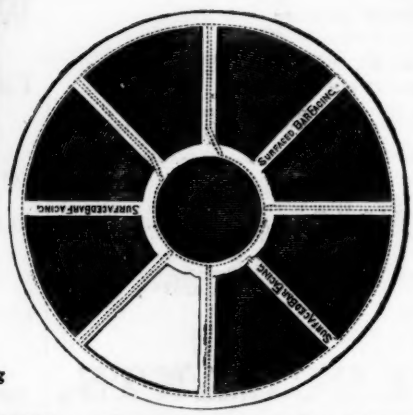
C. & W. WALKERS' PATENT CENTRE-VALVES.



Elevation of the Centre-Valve for four Purifiers. The safety cover is shown broken, to enable the Valve itself, which is inside, to be seen.



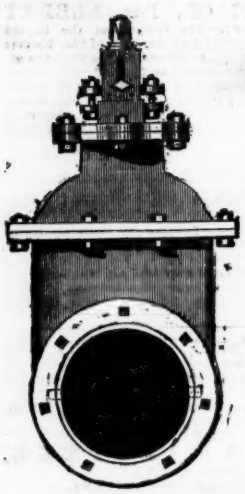
Plan of the Body, showing the Valve lying in it, with three of the facings, which were formerly exposed to settlements of dirt, carbon, naphthaline, &c., but which are now always covered by the surfaced bar-facings of the Valve. (See below.)



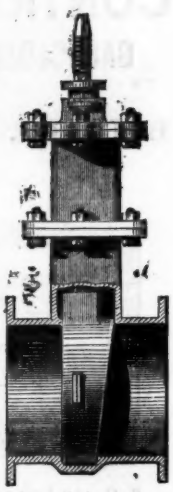
Plan of the Valve, or upper portion, showing the surfaced bar-facings referred to above.

These PATENT CENTRE-VALVES are the most perfect and certain means for working Purifiers. The Valve itself is protected from all injury inside the safety cover. The working of the Valve is so easy, and so governed by the stop-catch movement, that the Purifiers can be instantaneously changed in the dark as well as in daylight. They are scraped perfectly true, metal to metal, the facings heretofore exposed are always covered, and there is nothing more reliable, certain, and durable in a gas-works. By their use the floor of the Purifying-house is clear and level; the Valve and all connexions being beneath the floor, out of the way of working. A very considerable improvement and saving is effected in the cost of the connecting-pipes.

FOUR-WAY CENTRE-VALVES FORMING INLET, OUTLET, AND BYE-PASS.



C. & W. WALKERS'
DOUBLE-FACED GAS-VALVES.



These solidly constructed double-faced Gas-Valves are superseding the old system of the light, single-faced disc, which is too uncertain and unreliable in large bores.

They are guaranteed absolutely gas-tight. They are very massive and rigid, and by improved modes of manufacture they are produced at very little excess in cost over the old light, weak system, which is liable to spring and bend, and become leaky.

The Valve is a rigid wedge of solid cast iron, having two perfectly scraped surfaced facings fitting between the two on the body, which are also surfaced.

A spring in two short halves, and, therefore, not liable to break, is used only for scraping the front facing clean.

The front facing is vertical; the back facing forms the wedge.

At a slight additional expense both flanges are faced to bolt to main-pipes.

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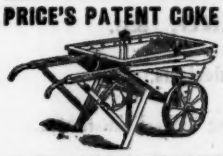

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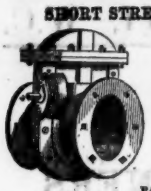

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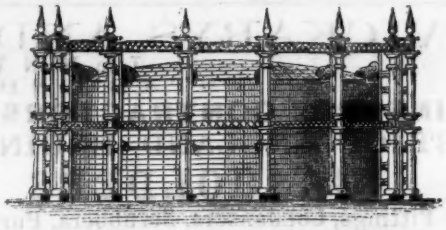

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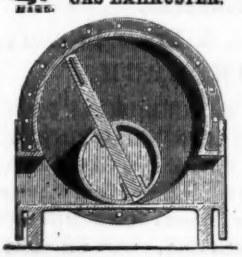

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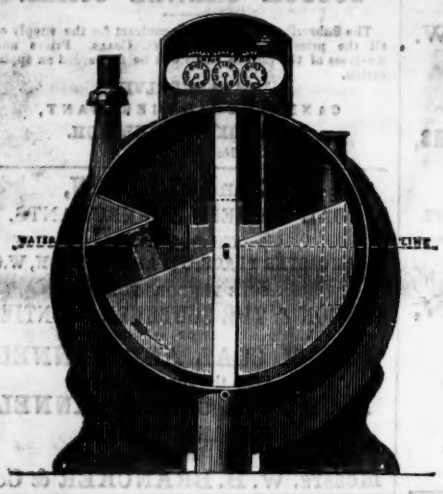

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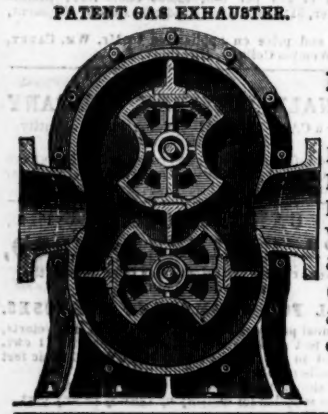

R. LAIDLAW & SON,

GAS ENGINEERS, CONTRACTORS, IRON & BRASS FOUNDERS,

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